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## PREVENTIVE AND THERAPEUTIC ASPECTS OF CENTRAL NERVOUS SYSTEM SYPHILIS IN GENERAL AND INSTITUTIONAL PRACTICE.*


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An enormous literature is available to show that neurosyphilis is very widespread and is one of the most frequent of all types of disorders of the nervous system. The frequency of neurosyphilis in general medical practice may be roughly estimated from the diagnostic work of the Mayo Clinic in which syphilis as a whole was diagnosed in 4 per cent of the patients and a high percentage of these presented a neurosyphilitic aspect.[1] Osler,[2] in a study of 58,000 patients with diseases of the nervous system, found that 10,498 or 18 per cent were due to syphilis. Ransone[3] emphasized the position of syphilis, including neurosyphilis, as a cause of disability and death in Virginia.

On account of the wide variance in the clinical manifestations of neurosyphilis the significance of early infection with the Treponema pallidum as a primary etiological factor in the production of nervous disorders is frequently overlooked. The dissimilar clinical pictures make the whole subject a very complex one; the symptomatology may vary from mild neurasthenia to manic convulsions. However, with the knowledge that a great bulk of nervous disorders have a syphilitic infection as their basis, there should be made a thorough clinical and laboratory (including spinal fluid) study of all cases with nervous or mental manifestations. The laboratory study is by far the most valuable in discovering and properly classifying neurosyphilis.

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Better still, we should treat adequately all cases of early syphilis coming to our attention, thus forestalling in large measure the later central nervous system involvement so common in inadequately and irregularly treated cases. All are cognizant of the fact that a certain number of cases will develop serious central nervous system syphilis in spite of everything that can be done. But, on the other hand, there are many patients now entirely incapacitated and a burden to society, who might be leading relatively normal lives had they been properly and adequated treated during the early stages of their disease.

The older theories, as expressed by the terms parasyphilis and metasyphilis, regarding the mode of invasion of the nervous system in syphilis, are unsupported. The approach of the Treponema pallidum to the nervous system is by way of the vascular system. The organisms conveyed to the nervous system by the blood stream are deposited about the smaller vessels and capillaries. Here an inflammatory reaction is set up as in any other infection. Hence, early neurosyphilis is overwhelmingly inflammatory as distinguished from degenerative in the later stages. Since the vascular supply of the nervous system is the chief route for the supply of antibodies and medicaments to control the infection, it follows naturally that early meningo-vascular syphilis will be most responsive to treatment. It is, therefore, obvious that the time to treat syphilis of the nervous system is while it is near the blood supply to which it owes its initial distribution. Once it has imbedded itself in the scars and inaccessible parts of the brain and cord where the blood supply is sparse, and once it has begun to invade the parenchyma, the outlook becomes progressively more grave. The prognosis depends largely on the degree of fibrous tissue changes with impairment of circulation and the amount of degeneration which has taken place. Once these changes have occurred, we are then deal-

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ing with late neurosyphilis which at best is very resistant to even vigorous treatment.

With the above related facts in mind, it is our purpose in this paper to present certain observations regarding the preventive and therapeutic aspects of nuerosyphilis as related to institutional and private practice, particular stress being given to the matter of inadequate treatment in early syphilis.

### Factors Determining Involvement of the Central Nervous System in Syphilis

As outlined by Zimmerman,[4] syphilitic involvement of the nervous system is, in general, determined by the following factors:

1. The strain of the infecting organism.
2. Variations in reaction of individuals to the Treponema pallidum.
3. Character of the early treatment.

### 1. The Strain of the Infecting Organism

Regarding this factor many authorities disagree. The precise bearing of various clinical and laboratory investigations on the question of strains of Treponema pallidum with neurotropic tendencies remains to be worked out by further study.

### 2. Variations in Reaction of Individuals to the Treponema Pallidum

Perhaps in the treatment of no other disease is less attention given to the general supportive measures and an orderly scheme of life than in syphilis. Unfortunately in early syphilis, the first few treatments relieve the patient of practically all subjective and objective symptoms. From this almost miraculous result they feel that the "shot in the arm" is all that is necessary or required of them, and that they can go out and lead as disorderly lives as they choose, feeling assured of no mishap. Why does this laxity exist in the management of syphilis when in practically every other disease great efforts are made to build up the resistance and increase the immunity of the patient by a strict and orderly regime in which much attention is given to diet, exercise, proper rest, avoidance of excesses, and the correction of associated abnormalities? These factors are of just as great importance in the treatment of syphilis as in any other disease if we are to expect the patient to react favorably. Lack of attention to these details of management determine, to a considerable extent, the invasion of the central nervous system. The physician does not usually take the time and trouble to inform the patient as to his proper care and necessity for long continuous treatment. Here we would like to say parenthetically that any physician who allows a patient with early syphilis to discontinue treatment should regard this as his failure. No case of early syphilis should be permitted to risk his own future or jeopardize his associates by prematurely discontinuing treatment for any reason whatever, including poverty. It takes time, energy, tact and unselfishness to keep some syphilitic patients under treatment after their external manifestations have disappeared, but under no circumstances can this responsibility be shifted from the physician.

There is space here only for the enumeration of other factors which influence the reaction of the host, such as sex, race, heredity, head trauma, alcoholism and environmental factors.

### 3. Character of the Early Treatment

Our greatest hope in the management of central nervous system syphilis lies in the adequate handling of the infection in its early inception. The patient is often not rendered secure from future inflammatory and degenerative changes for the following reasons:

a. Failure to treat early syphilis to a minimum standard of adequacy.

b. Failure to examine the spinal fluid in the early stages of the disease.

c. The placing of too much reliance on laboratory tests as a guide to treatment.

d. Failure to utilize symptomatic warnings of neurosyphilis.

a. *Failure to treat early syphilis to a minimum standard of adequacy:*

To fix a standard of adequate treatment to suit all cases is well-nigh impossible, for even with the most thorough clinical and laboratory data at hand it is often difficult to say just what degree of dissemination has taken place and, hence, how vigorously a given case should be treated. Keidel[5] states that investigations of numerous observers make it probable that the central nervous system is invaded in all patients contracting syphilis, but that clinically less than 50 per cent of these patients are neurosyphilitic. This fact alone lays emphasis on the importance of prolonged courses of adequately intensive, continuous early treatment in reducing the incidence of neurosyphilis.

TABLE I

Summary of Early Treatment in 225 Cases of Neurosyphilis of All Types Occurring at the University of Virginia Hospital from January 1, 1920, to January 1, 1931:

| | No. | Per cent |
|---|---|---|
| Primary or early secondary syphilis with no treatment | 5 | 2 22 |
| No treatment except local or short course of medication by mouth | 45 | 20.00 |
| Inadequate early treatment with arsphenamine | 26 | 11.55 |
| Other forms of treatment in inadequate amounts | 29 | 12.88 |
| Minimum of one year of continuous(?) treatment | 1 | .44 |
| Records incomplete | 40 | 17.77 |
| Denied early infection, i. e., genital or skin manifestations | 70 | 31.11 |
| Cases developing in the early months in spite of standard program of treatment | 2 | .88 |
| Congenital syphilitics, not treated | 7 | 3.11 |
| Total | 225 | 100.00 |

Table I, which was compiled from a study of 225 cases of neurosyphilis of all types occurring at the University of Virginia Hospital from January 1, 1920, to January 1, 1931, shows that only one (.44 per cent) of this whole number was treated according to modern minimum standards. In making this study the minimum standard chosen consisted of one year of continuous treatment, using alternating courses of arsphenamine, bismuth, and mercury. Of this group, some contracted syphilis before the advent of arsphenamine, others before modern standards of treatment were in vogue, and still others had been treated inadequately with arsphenamine. No attempt was made to separate these into time periods on a comparative basis or to evaluate the results of eventual therapy. Our chief object was to determine just how many of the cases of neurosyphilis had received adequate early treatment. Further analysis of Table I shows that 20 per cent of the cases had no early treatment except such local measures as cauterization, salves, and powders, or a short course of medication by mouth, or both. A still larger group (31.11 per cent) denied early syphilis, that is genital or cutaneous manifestations, so we may assume, if such data is accurate, that they had no early treatment of any kind. In 17.77 per cent of the cases the records were incomplete as to early infection and treatment. 11.55 per cent of the group had been treated inadequately with arsphenamine and 12.88 per cent inadequately with other forms of treatment such as mercury. 2.22 per cent developed central nervous system involvement in the early stages before any treatment had been instituted. 3.11 per cent of the cases were due to congenital syphilis. In only two cases (0.88 per cent) did neurosyphilis develop during the early months of treatment in spite of a standard program of antisyphilitic therapy. In these latter two cases as well as the one case mentioned above, it is impossible to be sure that they took the courses of mercury inunctions properly and regularly.

Moore[6] gives figures as follows on the percentage of positive spinal fluids in treated and untreated cases:

| Early Syphilis | Chancre Per cent | Secondaries Per cent |
|---|---|---|
| Untreated Cases | 21 0 | 22 0 |
| Treated Cases | 2.9 | 13.8 |
| Late Syphilis | | |
| Untreated Cases | 17-28 | |
| Treated Cases | 14.00 | |

The lower incidence of neurosyphilis, both early and late, in cases who had received some treatment as compared with untreated cases, makes it imperative that we try further to reduce this incidence by proper management in the early stages of the disease. Further, modern treatment apparently cures clinically and serologically all except about 5 per cent of the cases of early neurosyphilis.

Regarding the controversial question of inadequate arsphenamine therapy as a predisposing factor to the development of central nervous system syphilis or its effect on immune processes, we are unable to draw any conclusions from this study or from the literature.[7] But because of the fact that a few doses of arsphenamine might make the patient more susceptible to neurological involvement, the responsibility of the physician initiating treatment to treat to a minimum standard is increased. The minimum standard recommended by most authorities is one year of continuous treatment and one year of intermittent treatment after the blood and spinal fluid become and remain negative.

b. *Failure to examine the spinal fluid in the early stages of the disease:*

Over-emphasis can scarcely be placed upon the importance of an early spinal fluid examination in the course of syphilis. Here may be found the very earliest and obscure signs of neurosyphilis. Reference is not made to the spinal fluid Wassermann alone. The activity of a syphilitic process in the central

nervous system is indicated earlier, and often only by the cytologic changes, increase in globulin or abnormal colloidal gold curve. Wile and Hasley,[8] in a study of 221 cases of syphilis in which only the chancre was present, found deviations from the normal in the spinal fluid in forty-nine or 22 per cent of the cases. In only eight of this group was the Wassermann test positive. It is excusable, if the patient is carrying a full program of treatment, to postpone the puncture until the end of the first or second course, but more desirable to have the spinal fluid findings early in the disease, particularly if there are neurological symptoms, as a check on the effectiveness of treatment and the amount of treatment which should be given.

A spinal fluid which is negative in all phases can be accepted as negating the presence of syphilis of the cord, brain, or meninges only when a careful physical examination fails to reveal any symptoms pointing to involvement.[9] And even in the absence of signs the negative spinal fluid, like the negative blood Wassermann, does not insure against neuro-relapse if the organisms are not kept subdued constantly until their eradication from the patient's body is accomplished. In contemplating this, one thinks of the slogan of Stokes —"Treat every patient to an arbitrary maximum determined by the best experience of the large clinics and not to an individual minimum determined by his tests."

c. *The placing of too much reliance on laboratory tests as a guide to treatment:*

An unfortunate attitude is taken by some physicians to rely blindly on the results of the blood Wassermann test in the diagnosis of syphilis whether it be of the central nervous system or not, and, further, to rely on the result of a single examination. This is particularly disastrous when there is a question of neurosyphilis, for the blood Wassermann is often negative in this condition. Tendency of the blood Wassermann toward an early negative should be regarded with suspicion and supplemented by a spinal fluid examination. This is suggested on the basis of work done by Moore and Kemp,[10] in which they conclude that a "prematurely negative" Wassermann test may indicate a lack of resistance to the syphilitic infection on the part of the patient.

The Wassermann reaction is only of value in determining a cure when it is done at fairly frequent intervals over a long period of time. It is neither fair to the patient nor very helpful to the doctor's reputation if at the end of a given course of treatment the Wassermann is negative and he is assured of no further trouble, and then later comes back with some kind of a recurrence.

It is not our intention here to deride the various laboratory tests, for, when used properly and interpreted in the light of accompanying data, they are invaluable as diagnostic and therapeutic aids.

d. *Failure to utilize symptomatic warnings of neurosyphilis:*

Many apparently adequately treated cases with negative serologic findings give symptomatic warnings of neural involvement that are often ignored by those who depend too much on the laboratory for their diagnoses. In spite of the widely variant clinical syndromes in which neurosyphilis presents itself, simply the knowledge that a patient has syphilis should be sufficient reason for increased alertness to even the vaguest signs and symptoms pointing toward neurological involvement. Stokes[11] enumerates the following as suggestive symptoms: Occurrence of a follicular type of eruption in the secondary stage and of marked alopecia; persistent headaches; cerebral neurasthenic symptoms, including, syphilophobias; marked nervousness and tremor, and insomnia in the syphilitic patient; slight or transient pupillary abnormalities; reflex anomalies, including exaggeration of certain reflexes with reduction of others; and signs of cranial nerve involvement.

In the above connection, attention should be called to a group of cases of brain syphilis which present a symptomatic picture almost indistinguishable from paresis. There is a diffuse inflammatory process throughout the cerebrum. These, under adequately intensive, continuous treatment over a long period of time show such improvement as would be impossible in a degenerative condition such as paresis. This is illustrated by the following brief case report:

A white male, age thirty-one, was admitted March 26, 1927. He was restless, talkative, irritable, excitable, easily distracted, indecent and rowdy. He had unsystematized delusions of persecution and ideas of grandeur. There was inability to solve problems and a very poor memory. History of genital sore ten years previously with only local treatment. Laboratory examinations were atypical of

paresis, but positive for neurosyphilis. It was impossible to keep him either at home or in a general hospital and he was sent to an institution for the insane. There he was pronounced a hopeless case and antisyphilitic treatment abandoned. His parent insisted on his treatments being continued, and in about two months he was symptomatically well and able to resume his regular occupation. From later reports this improvement was apparently permanent.

## Summary

1. The high incidence of syphilis as a cause of disorders of the nervous system is pointed out.

2. Emphasis is laid on the fact that pathologically and clinically early neurosyphilis is predominately meningeal and meningo-vascular.

3. Factors determining the involvement of the central nervous system in syphilis are enumerated and discussed.

4. A study is reported regarding the history of early infection and treatment in 225 cases of neurosyphilis of all types. Only one case in this group had received standard antisyphilitic treatment in the early stages of the disease.

5. Clinically, meningo-vascular neurosyphilis cannot always be differentiated from paresis. For this reason every case of neurosyphilis should be given regular antisyphilitic treatment. A pertinent case is cited.

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## Discussion

Dr. Raymond Kimbrough, *Norfolk:* A prominent feature of the meeting of this society last year was a symposium on syphilis. We were reminded of the great losses in life and health that resulted from syphilis. The value of the prevention of infection and the prevention of the late manifestations was pointed out. It was shown that treatment of early syphilis, if prompt and effective, would practically eliminate late syphilis.

This paper forms a valuable appendix to the symposium of last year's meeting and to that of this year's meeting on mental hygiene.

Whether or not a few doses of arsenical treatment are worse than no treatment in fostering the development of neurosyphilis is not so important as that adequate treatment will prevent the late manifestations in almost all cases. Adequate treatment, even in very early syphilis, includes more than the arsenicals. Twenty years' experience has shown that the arsenicals should not be relied upon alone. The use of bismuth, mercury, iodides, and the accessory general care are very important.

The problem of the prevention of these complications of syphilis involves more than the formula for therapy and an early diagnosis. It has been stated that the State of Massachusetts spends $200,000 annually for the care of patients with dementia paralytica alone. Other states are in a similar position. It is evident that these huge sums of money could be saved if the early cases were adequately treated, and it is natural that the medical profession should consider trying to eliminate this expense by assuming control of early infections If we practitioners wish to continue to treat syphilis, we must recognize and accept our responsibility to give our patients an early diagnosis and adequate treatment.

Dr. Ralph P. Truitt, *Baltimore:* I started in psychiatry in 1910. At that time a great deal was done in the treatment of paresis. The hospital where I was located completed a Wassermann survey of the inmates, spinal punctures were done and treatment with salvarsan instituted when indicated. Because the treatment was not always successful it was thought that the injected material was not reaching the seat of the lesion through the circulation. There was later confusion about the spinal fluid circulation. At first intravenous, then intraspinous, later subdural, and still later direct injections into the ventricles were the treatment methods instituted. Of course, there were enthusiasts who supported these different methods of treatment as they advanced. It was believed by many that in those cases successfully treated they were probably vascular or cerebral types of syphilis rather than paresis. Undoubtedly a great deal can be done to arrest the paretic process, but it is most difficult to differentiate clinically, and even sometimes at autopsy, between vascular or cerebral types of syphilis and paresis. I would not detract from the results reported in the treatment of paresis by chemicals and also temperature producing agents, but one

must consider, however, the fact that when there has been definite destruction of the brain substance we have not reached that point where we can replace the destroyed cell material.

Mistakes are possible in clinical diagnosis. There should be intensive treatment of all syphilis at whatever stage it is found regardless of the nervous system symptoms and whether the clinical picture is that of paresis or not.

DR. SMITH, closing the discussion: There is very little to add to the discussion. It should be emphasized that any number of atypical neurological and psychiatric conditions—for example, hemiplegia in early life—when properly investigated will be found to have a syphilitic etiology. All neurological and psychiatric cases, whether institutional or private, should have a routine blood Wassermann and spinal fluid examination as a minimum for the elimination of syphilis before they are classed as incurable conditions.

## THE RELATION OF CERTAIN PELVIC CONDITIONS TO REMOTE CAUSES AND EFFECTS.*

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Much of every gynecologist's practice is concerned with possible association of pelvic pathology and systemic disorders, such as neuritis, arthritis, mental disease and the like, mostly with doubtful conclusions. More of our work deals with genital defects secondary to functional disturbances of remote endocrine connection, for which new discoveries have provided means both of diagnosis and treatment. Since the latter portion will inevitably multiply and inasmuch as some misunderstanding, and as yet many undiscovered factors still obscure the practical usefulness of present day knowledge of female endocrinology, I wish to briefly emphasize the necessity for adequate attention to our patient's general as well as pelvic status.

SURGICAL ASPECTS: Our management of gynecopathy has progressed in spite of two obstacles, namely, that well known feminine urge to ascribe most any complaint to, and accept dubious proposals for "womb trouble": and the equally foolish medical tendency to choose meddlesome interference without reason. Such partnership in therapeutic experimentation suggests the description of the late Dr. John B. Deaver upon observing patient and physician with stethoscope between, of a fool on one end and a knave on the other.

But times have changed, so that, for example, aimless or harmful excursions in the name of dilatation and curettage have given way to endometrial exploration. Similarly, mischievous dilatation of the cervix for stenosis, by metranoikter and stem pessary in the hope of relieving sterility and painful menstruation yields to endocrinous developmental therapy. No longer is the uterine cavity scalded with steam under the technic of atmokausis when metrorrhagia is caused by lack of thyroid or insufficient progestin and excess folliculin. Just as it is futile to char the uterine cavity with zinc chloride solutions for specific cervical leucorrhea when Hyam's conification, or electro-thermic desiccation is indicated; or to amputate or suture the cervix when linear cauterization will cure erosion and ectropion: so is it unethical to suspend the uterus for quiet, uncomplicated backward displacement, when backache is occasioned by flatfeet, sacroiliac strain or obesity.

Experience with my last two hundred consecutive office patients illustrates the folly of recognizing one's cases by vaginal peculiarities alone, but indicates that the public is not much impressed with the importance of the pelvic organs as indicators of functional systemic disturbances, because of ten women seen for routine health examination, four before and six after marriage, only two reported on account of general disturbances; one for oral herpes aggravated during menstruation, and one for acne vulgaris with menstrual irregularity. Six women complained of dyspareunia, all with more or less nervous instability, but only one was sure of the interrelation; and there were additional evidences of the failure of women to realize that physical marital incompatibility is the commonest cause of nervous breaks, just as vicarious sexual stimulation is the usual cause of functional bladder irritability.

In passing, I can mention twenty-four examples of sterility, sixteen largely mechanical or pathological, eight entirely functional. Also complete backward uterine displacement appeared forty-four times, sixteen in simple form, only four complaining: but twenty-eight complicated, of whom four only were free of symptoms.

Several significant conditions featured the series, first—two cases of senile cervical atresia with pyometra, one showing neuritis and the other mild arthritis, both relieved by uterine drainage. Somewhat similar was my experience with chronic arthritis and non-specific

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cervicitis (hypertrophy, induration, cysts, etc.) in one office case and in several women from the arthritis clinic of the Orthopedic Hospital, namely, improvement in the joints following cauterization of the cervix. One might argue that some of the above cases had reached the menopause, when arthritis is not uncommon; and that the gonococcus, for instance, cannot invade the system by way of the cervical substance; also, that countless numbers of women suffer with non-specific cervicitis without ever experiencing joint trouble; yet the cervix must be considered as a possibility in looking for a focus among infectious etiological possibilities. E. C. Rosenow's principle of electrophoretic potential of streptococci as isolated from atria of infection in studies of encephalitis and other diseases of the nervous system, and extended to epidemic hiccup, spasmodic torticollis, multiple sclerosis, neuritis, sciatica, etc., can separate neurotropic from arthrotropic streptococci, and should be available for cervical studies in this connection.

Medical Aspects: The relation of gynecology to the ductless glands is so intimate that menstruation and even reproduction should be considered expressions of systemic action. Aside from these two features, knowledge of the endocrine system is far more important in women than in men for several reasons:

1. Control of the hormone producing glands lies in the sympathetic nervous mechanism, which is readily affected by feminine sensitiveness and emotional variability, "angel food" diet, lack of exercise, etc.

2. Marked variations in disposition and reactions complicating puberty, menstruation and the menopause, as well as pregnancy, designate critical alterations in ovary, thyroid and pituitary, as shown by specific tests.

3. The thyroid gland is ten times more often affected in women than in men, and there is greater interrelation between ovary and suprarenal cortex.

4. Menstrual disorders, and endometrial histology are excellent guides to certain glandular dysfunctions.

*Physiology:* In order to manage genital dysfunction, including functional sterility, one must have a clear perspective of woman's entire system. We are familiar enough with extreme changes in some of the endocrine organs, especially before puberty, such as cretinism, gigantism or adiposa dystrophia genitalis, eunuchoid individuals with long extremities rather than female child castrates of which there have been but few examples, etc. But exaggerated general characteristics of critical defects in thyroid, pituitary and ovary prior to puberty do not concern us in this discussion, and similar deficiencies in adults rarely constitute gynecological problems, so that we must be able to discover the far more frequent although often obscure expressions of mild glandular disorders, in adolescents and mature women, and in all such cases take advantage of new biologic tests.

*Individual Glands:* Although the pineal and thymic glands atrophy near puberty, they do not concern us in a practical manner, nor do the parthyroid and pancreatic hormones complicate our diagnostic or therapeutic resources from a strictly genital standpoint. But the interrelated multiple functions of ovary, thyroid and anterior pituitary, and to some extent of the suprarenal gland, are so significant to gynecologists as to warrant a brief summary of each before discussing genital dysfunction in adults.

*Ovary:* There is evidence of foetal ovarian activity; and of some function in the child's interstitial tissue or undeveloped follicles, but we are concerned only with the mature ovary which, under the influence of the gonad stimulating fraction of the anterior hypophysis, shows its first major product:

A. *Folliculin:* Theelin, estrin, etc., or the active principle of the follicular fluid which develops coincidentally with egg ripening for the purposes below:

1. Congestion and development of the tubular genital organs.

2. Growth of new endometrium from the post-menstrual through the height of the interval stage, but never into the pre-menstrual or pre-conceptional type.

3. Stimulation of uterine peristalsis or rhythmic contractions, so that experimentally excess of folliculin can produce abortion.

4. Association with progressive cyclic activity of the anterior (luteinizing) pituitary hormone.

5. Synergestic and essential for, yet also antagonistic to the second major product of the ovary, corpus luteum secretion.

6. Excretion: Normal women (Frank) eliminate 30 to 100 mouse units of female sex hormone per litre of urine, or 800 to 1,500 mouse units during an entire menstrual cycle, most at the time of ovulation and one or two

days prior to menstruation. For several days before each period one mouse unit of hormone per 40 c.c. of venous blood (25 to 40 M. U. L.) also may be demonstrated by the accurate and practical castrated mouse oestrus test.

B. *Progestin:* Corporin, etc., or the hormone derived from luteinization of the follicle cells under the influence of specific anterior pituitary action, with these effects:

1. Progressive development of the interval endometrium into the pre-menstrual type, but only in conjunction with folliculin, which is secreted by the corpus luteum as well as in the follicle fluid, since progestin alone cannot modify the uterus of an untreated castrate.

2. Depression of rhythmic uterine contraction, and inhibition of ovulation, so that experimentally excess of progestin from administration of lipoid extract can prolong pregnancy to the point of fetal death; and, conversely, insufficiency of this hormone, as with ablation of the corpus luteum in pregnant rabbits, may result in abortion. In the human, however, at least after the first few weeks, the corpus luteum is not essential for pregnancy. Theoretically, it is progestin that prevents superfecundation by inhibition of ovulation.

3. Promotes excretion and inhibits production of folliculin.

4. Reciprocates with cyclic anterior pituitary activity.

5. Experimentally, relaxation of the pubic ligaments of the gopher (Hisaw) and mucigination of the vaginal mucosa of rodents, as seen in pregnancy, denote additional fractions of aqueous corpus luteum extracts.

6. Excretion: Progestin has not been definitely demonstrated in the circulation.

*Anterior Pituitary:* Composed of two main types of cells, produces five or more hormones or separate fractions, which may be cyclic stages of a fewer number. We are concerned mainly with two in the mature normal woman as follows:

*A. Prolan A*—row 1, alpha, etc.—controls maturation of the ovum and follicle hormone activation.

Excretion: A normal non-pregnant woman will show as high as 25 rat units per litre of blood during the maximum concentration of prolan A., i. e., from six to nine days after onset of the previous menstrual period, following which as much as 10 R. U. L. may be removed from the urine, as proved by means of follicle ripening (A. P. R. I), or blood points (A. P. R. II) in ovaries of immature rats injected with the woman's extract after removal of sex hormone from the blood or urine.

*B. Prolan B*—row II, Beta, luteinizing hormone, etc.—which stimulates formation of lutein substance and activation of progestin.

Excretion: The normal non-pregnant woman will show occasionally traces of prolan B in the blood according to the appearance of atretic corpora lutea (A. P. R. III) in immature mice following injection tests. Excretion of prolan B is very rapid, as proved by disappearance of the hormone after introduction in large quantities by means of transfusion of blood from a pregnant into a non-pregnant woman. Prolan B, however, is not stored in the pituitary.

*Products of Conception:* (The gestational gland—Frank). After nidation, pre-pituitary hormones appear in the follicular fluid and also in the placenta in great amount, due to explosive pituitary over-activity, resulting in recovery from the mother's venous blood of as much as 3,000 M. U. L. of prolan A and B, and from the urine 5,000 M. U. L. (Frank). 6-8,000 M. U. L. (Aschheim—Zondek), 8-10,000 M. U. L. (Friedman), constituting the basis of the Aschheim-Zondek biologic tests for pregnancy.

Moreover, at first the trophoblast and later the placenta elaborates along with the corpus luteum of pregnancy relatively enormous amounts of female sex hormone, so that the amniotic fluid is super-charged, and 50 M. U. L. of hormone may be recovered from the patient's blood and 10,000 M. U. L. from the urine, forming the principle underlying the Mazer-Hoffman biologic test for pregnancy. Much of each hormone is also excreted by bowel.

*Thyroid Gland:* Needs no discussion except that slight disorder with very moderate deviation of basal metabolic rate may produce disproportionately greater genital manifestations. A new thought in connection with pregnancy is found in the recommendation of iodine (Lugol's solution) by rectum for hyperemesis gravidarum, which I have tried with variable results.

*Suprarenal Cortex:* Pigmentation of the external genitals in Addison's disease; association of over-developed adrenals and genitalia in negroes; well-developed adrenals and genitals in female monstrosities showing cranial defects with pituitary impairment; accessory

suprarenal cortical collections along the internal urinary and genital tracts; menstruation under shock; impotence with "adrenal asthenia"; and, finally, similarity of the lipoid adrenal cortical cells with ovarian lutein elements suggests close relation of these glands. Experimental evidence can be found in both metabolic and vasomotor effects from luetin activity under stimulation of the suprarenal substance.

Specific Disorders: *Folliculin* may be primarily scant in amount and activity, or secondarily diminished by insufficient pituitary activation, so that in either case hypoplasia of the tubular genital tract, including endometrium, will result. A curious form of long continued deficiency of prolan stimulation of follicular development is characterized by failure of rupture of incompleted graafian follicles, which undergo atresia, so that the ovary is studded with collections of atretic cysts without luteinization. In turn, the endometrium, unable to transform from interval to pre-menstrual state and to be cast off in menstruation under the normal action of corpus luteum progestin, instead responds to constant folliculin stimulation from the multiple atretic follicles by hyperplasia, expressed in the form of amenorrhea, irregular anovular "menstruation," or more commonly as the prolonged and often serious adolescent or climacteric bleeding, depending upon a certain additional specific bleeding factor elaborated by the anterior pituitary. Thus we see an original hypofunction changed into excess accumulation of female sex hormone, associated with endometrial hyperplasia, and demonstrated clearly by hormone tests as well as organic change in the ovary, but *with or without* uterine bleeding. The medical correction of this condition will be considered later, but at this point should be mentioned the improvements obtained from excision of the follicle cysts, as recommended by Geist, Macomber and others.

*Progestin:* As described under folliculin disorders, insufficient or absent progestin from lack of pre-pituitary luteinizing hormone is incompatible with pre-conception endometrial development and normal menstruation. There is no available progestin preparation for therapeutic purposes, but, if so, female sex hormone accompaniment would be essential for results.

*Prolan:* Most authorities recognize at least two pre-pituitary ovarian hormones, but since prolan B cannot be isolated from woman's blood or urine without A, and since Mazer states positively that B is only progressive development of A, and Friedman will not admit that the two are separate, disorders of the anterior hypophysis may be grouped together.

Insufficiency has been described of necessity under dysfunction of the ovarian hormones, and is far more frequent than primary disorder of the ovary, or indirect genital defect from thyroid abnormality.

General Disorders: The incidence of types of functional disorders peculiar to women, taken from Mazer's experience with 103 cases of functional sterility, is thyroid four, ovarian fifteen, pituitary sixty-one and doubtful twenty-three. For the classification of patients, in addition to the biologic tests already mentioned, pre-menstrual curettage must be performed because hyperplasia of interval type endometrium may be associated with excess or absent bleeding, and, in considering functional sterility, presumptive "anovular" or grossly normal menstruation will occur without pre-menstrual type of endometrium as frequently as 40 per cent.

1. *Ovarian Dysfunction:* Primary hyposecretion is disputed, but is suggested by eunuchoid or excessively feminine characteristics (Mazer), normal or scant hair, average weight or thin, nervous instability and fussy disposition, amenorrhea, hypomenorrhea or oligomenorrhea in 50 per cent, with genital hypoplasia. Female sex hormone levels are lower than normal, but there is compensatory overactivity of the pre-pituitary secretions, demonstrable by Frank's tests.

Primary ovarian hypersecretion may be expressed by the over-sexed individual showing no stigmata of pituitary over-growth, for which amputation of the clitoris is still frequently urged, but should be always refused.

2. *Pituitary Dysfunction:* Primary hypofunction is associated with characteristic obesity, hypertrichosis, male type of genital hair, stable or slow nervous reactions, increased sugar tolerance (low post-pituitary activity) eye-ground changes such as enlarged blind spots, yellowed discs, and reduced visual fields. The female sex hormone is low in such women, but so is prolan, none of which can be demonstrated. Naturally impaired genital development and secondary menstrual disorders will occur.

Pre-pituitary hyperfunction is expressed in

most pregnant patients by coarse features, decreased sugar tolerance, headache, etc., and occasionally by the acromegalic type of gynecologic patient, who will ultimately show decreased pre-pituitary action due to degenerative cell changes. Elevated prolan level in the blood is additional proof.

TREATMENT: It is unfortunate that genital dysfunction is usually in the form of hypoplasia with undercharged ovarian hormones, for which we can find not very prompt curative agents. However, in spite of warnings from Frank and Rubin, appropriate cases will respond to the following limited agents:

1. *Female Sex Hormone:* Great numbers of commercial preparations are labeled with from 10 to 50 rat units per ampule or tablet, but even the best (theelin and progynon) assay less than indicated when ready to use. This discrepancy plus inadequate dosage, interrelation of other hormones, and failure to choose biologically diagnosed women at the proper phases are sufficient reasons for the variable results in the literature. Mazer advises an amount of sex hormone directly proportionate to the degree of uterine hypoplasia, as high as 500 to 1,000 rat units daily, administered in frequently repeated doses, particularly by mouth. The Schering Corporation has recognized the value of this method by the manufacture of their newest tablet containing 400 rat units each, as compared to their present tablet of 50 rat units, but from 5 to 7 times as much is required by mouth as by intramuscular injection.

There is no doubt that the sex hormone can enter the circulation, for it may be recovered rapidly from the urine; and the tubular genital tract, although not the ovaries directly, can be markedly developed, so producing a uterus responsive to residual ovarian function, indirectly affected pre-pituitary or to the effect of additional artificial agents. There should be little fear of ovarian sclerosis in women following prolonged female sex hormone administration, as experimentally possible in animals, because the expense of the enormous number of units required would prohibit.

Painful menstruation, further assisted by thyroid extract, and menopausal vasomotor annoyance, will also respond to similar treatment, as will occasionally frigidity.

2. *Luteinizing Hormone*—Prolan, antuitrin, follutein, etc. Parke, Davis and others have prepared an anterior pituitary hormone from urine of pregnant women (and other firms from placental tissue). The former Friedman has found to contain 100 rat units or more when fresh, gradually diminishing, but holding a potency of about 80 R. U. per c.c. for four weeks or more. With this preparation Emil Novak, Anspach, and others have secured frequent and amazingly rapid relief of irregular functional uterine bleeding, associated with hyperplasia, using 200 R. U. per injection. The quick response proves that a pituitary bleeding factor is involved, but ultimate cure after cessation of treatment suggests a correction of ovarian-pituitary imbalance by corpus luteum production.

I can see no reason why this product, preceded by female sex hormone administration, will not prove eminently successful in amenorrhea and other genital hypoplasias, but cannot present sufficient experience at present. In any event, after years of effort, for the first time in the last few months we have available potent anterior pituitary hormone extracts.

Friedman has just shown that luteinization following administration of extracts from pregnant urine (prolan) occurs as a direct effect on the ovary and not indirectly via the pre-pituitary, by injecting small quantities of the luteinizing hormone straight into the follicle and obtaining a corpus luteum which although it becomes atretic rather soon, in spite of the presence of unchanged follicles and much folliculin in the opposite ovary, causes a decidual tumor in the uterus. Thus, in doe rabbits, proven to be in heat by the removal of a freshly dropped litter, Friedman has recently secured at will any degree of follicle development by injections of luteinizing hormone, in average amounts of 1 to 1.2 R. U. per kilogram.

I can, therefore, predict that, given any women with not too long standing amenorrhea, in the course of say twelve months administration with cyclic amounts of the above product, possibly combined with female sex hormone, it will be possible, in the absence of pathology, not only to promote normal menstruation but also conception. This should be possible in spite of much larger doses required for hypoplasia than for functional hemorrhage, inasmuch as the preparation previously referred to is non-toxic, whereas the German preparation "prolan" is the reverse, as expressed mainly by nausea and vomiting.

*Thyroid Extract:* Indirect hypoplasia and

insufficient menstruation from hypo-thyroidism, including functional sterility, is infrequent compared to the pituitary type, but will yield readily to proper dosage and weight reduction. Excessive bleeding due to hypothyroidism responds promptly to thyroxin.

*X-Ray Treatment:* Primary hypo-ovarism with amenorrhea treated by X-ray irradiation of ovaries alone with from 10 to 15 per cent of a skin erythema dose three times only in two weeks and *not repeated*, has changed to regular menstruation and conception in sufficient instances to warrant being included in our list of therapeutic agents. Gynecologists explain this reaction on a basis of "ovarian stimulation," although most roentgenologists will not agree with such explanation. In any event, only an expert radiologist can avoid the real danger of possible permanent ovarian damage under even such mild exposure.

Ovarian irradiation in heavier amounts must, of course, be occasionally resorted to for ovarian hyperfunction, particularly for oversexed women, puberty and climacteric hemorrhages, etc.

X-Ray for Pituitary Dysfunction: Irradiation of the pituitary gland alone with mild exposure, followed in some instances by similar "stimulation" of the ovaries, may be expected to regulate menstrual flow in 80 to 90 per cent of women and to increase fertility as much as 50 per cent in properly selected individuals. Great caution must be exercised to avoid X-ray exposure of the ovaries and pituitary gland together in primary ovarian failure or in thyroid deficiency.

*General Measures:* Attention to exercise, hygiene, diet, etc., should accompany the foregoing therapeutic efforts, but should not constitute the entire treatment. Frank, for instance, minimizes irradiation and discredits organotherapy, to rely mainly upon a high protein diet for inanition amenorrhea; and upon elimination, occasional venesection, and high calcium feeding for the reduced female sex hormone—increased pre-pituitary secretion syndrome at menopause. On the other hand, in the management of hyperfunction the same authority, feeling that puberty metrorrhagia is usually self-limited, prefers in addition to repeated D and C, or reducing irradiation if needed, rest, fresh air and sun, tonic diet and occasionally transfusions, reserving for a separate group ("pre-menstrual tension") limitation of fluids, calcium feeding, and elimination by caffeine and saline purgatives.

With respect to the effect of limitation of fluids upon menstruation, Temple Fay has repeatedly called my attention to the usual suppression of menstruation following his original method of fluid reduction to 30 total ounces per day or less in cases of increased cerebral pressure, and I have observed a tendency to this effect with similar restriction in certain cases of menorrhagia.

Finally, the necessity for vitamines, particularly "E," and for minerals especially manganese (McCollum) should not be forgotten.

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## HAY FEVER WITH COMMENTS ON THE PAST SEASON IN RICHMOND.*

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It was not until 1911 that Noon successfully demonstrated the value of pollen extracts in the treatment of hay fever. Prior to this time medical control of this type of allergy was baffling and disappointing. This new knowledge was immediately capitalized by many proprietary houses, and physicians everywhere began subcutaneous immunization following schedules enclosed in every package of pollen extract sold by these concerns. Patients were encouraged to attempt their own treatments, so simple did the procedure seem. The results were disappointing. On the other hand, numerous qualified workers in this field have shown what uniformly excellent results can be obtained with a better understanding of the principles involved—careful adherence to a technique designed to discover the qualitative as well as quantitative reactions of the offending protein,—and a realization of the fact that the extract should be given in such quantity as to really immunize the patient, at the same time all the safeguards, that a knowledge of the hazard of the procedure demands, should be thrown around him.

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The Clinical History of patients suffering from this type of allergy is both interesting and informing—interesting, because of the striking hereditary factors; informing, because of itself a careful history will almost certainly point the way to the absolute demonstration of the offending agent. In this way we discover whether the patient's symptoms develop in the spring, the early summer, or the fall—corresponding to the flowering seasons of the trees, grasses and weeds. The Physical Examination is naturally important as it relates to the nose, throat and sinuses, and their obviously related and correctible pathology.

In pursuing the problem of diagnosis, the next step is an important one—a demonstration by the cutaneous test of the specific pollen sensitization. Essential at this stage is a reliable pollen extract. Extracts freshly prepared by the allergist himself have satisfied this demand. Equally important is the choice between the scratch and the intra-cutaneous method. It is now generally admitted that the safety of the patient demands that he be given the scratch method by preference. The final point of importance is the use at the outset of sufficiently dilute extracts to avoid at this stage the danger of anaphylactic shock. It is difficult to forget a small boy who received an intradermal injection of a dilution somewhat stronger than it should have been. He immediately displayed alarming symptoms—generalized urticaria, cyanosis, dyspnoea, a thready pulse and rapidly developing edema of the lungs. Repeated injections of adrenalin were required over a period of twelve hours.

Having demonstrated one or more plants, to the pollen of which the patient is sensitive, in the next step we seek to determine the degree of sensitiveness that exists to these respective pollens. This is accomplished by a series of graduated doses beginning with dilutions often as low as 1-100,000 and working up to a satisfactory wheal. We are now ready to proceed

with the specific treatment based upon a quantitative as well as a qualitative knowledge of the offending pollen. It is usual to begin with a dose just under that which produces the smallest skin reaction. It is customary to administer the specific extract beginning six or eight weeks in advance of the clinical onset of the disease in graduated doses at three or four day intervals, attempting to get as much as possible of the specific pollen extract into the patient in the allotted time without running the danger of reaction. The procedure is not always as simple as this,—in the case of multiple sensitization, which is usual, one has to remember that whereas, for example, timothy extract will ordinarily protect against sensitization to all the other grasses, among the trees this does not hold. Except in well recognized families such as the oaks, our extracts of tree pollen have to contain all the pollens to which the patient is sensitive. This general rule applies also to the weeds. Another important point in making the selection of the specific pollen for treatment is the fact that clinical hay fever is not produced by all the pollens to which the multiple sensitive patient may be sensitive. For instance, a patient may react to both ragweed and timothy and have his hay fever only in the fall. It is obviously useless to include timothy extract in his treatment. This brings us to an important point, namely, that in the selection of the therapeutic pollen extract, one must give due consideration to the relation of the time of pollination to the clinical manifestation of symptoms. Careful botanical surveys have been made in a number of sections in this country and the seasons of pollination for various trees, grasses and weeds are well known for New England, the West, and the far South. Such a survey of the pollination seasons of Virginia would be of distinct value in the management of hay fever in this state.*

We pass rapidly over what is known as the non-specific treatment of hay fever. It comprises the time-honored local measures,—applications to the eyes, nose and throat, the use of the X-ray and radium. The bromides internally, a sea voyage, a trip to the mountains, confining one's self to a room with windows closed and free from drafts, especially at night, the use of pollen filters in windows, or actually worn in the form of a mask, have all proved of service, but in no sense can be considered to take the place of specific treatment.

The onset, duration, severity and type of hay fever varies geographically and depends chiefly upon the indigenous flora of each locality. Our Virginia season is earlier than the Northern season and a little longer, reputed to be due to the later killing frosts. Our first killing frost in Richmond comes usually on November 2nd. As has been said, we have three definite seasons, corresponding to the flowering of the trees, grasses and weeds. This is not true in New Orleans or California where pollen produced hay fever occurs all the year round. During the pollen season everywhere the lower layers of the air are laden, by actual calculation, with tons of pollen, but careful counts show the concentration of pollen far greater over western cities than over our eastern cities. For instance, the average in one year for New York, Philadelphia and Richmond was 30 pollens per cubic yard of air as against an average the same year of 600 for Oklahoma City, Ann Arbor and Indianapolis. It is a very old but nevertheless true notion that a change in residence, a visit to the mountains, an ocean voyage, a sojourn in Europe (where by the way there is no ragweed) works wonders. We in Richmond know nothing of mountain cedar as an exciting cause. In Texas it is a serious menace. The same may be said of the Russian thistle and the sages in the Rocky Mountain district.

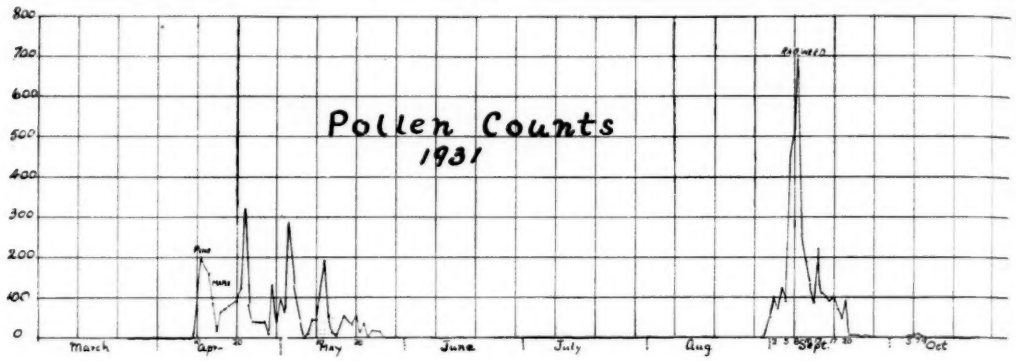
The specific botanical variation in different districts, less obviously dissimilar, may be just as marked and as puzzling. A move of only a few miles may be sufficient to afford relief to a patient with hay fever. New Orleans and Chicago hay fever are very different, one is a city of grasses, the other a city of weeds. All of these facts point clearly to the necessity for accurate botanical surveys of the wind pollinated plants. A number of excellent investigations, as I have intimated, have recently been made on the Pacific Coast, in Texas, Memphis, New Orleans and as near as Washington, D. C. A similar survey for Richmond and vicinity is needed.†

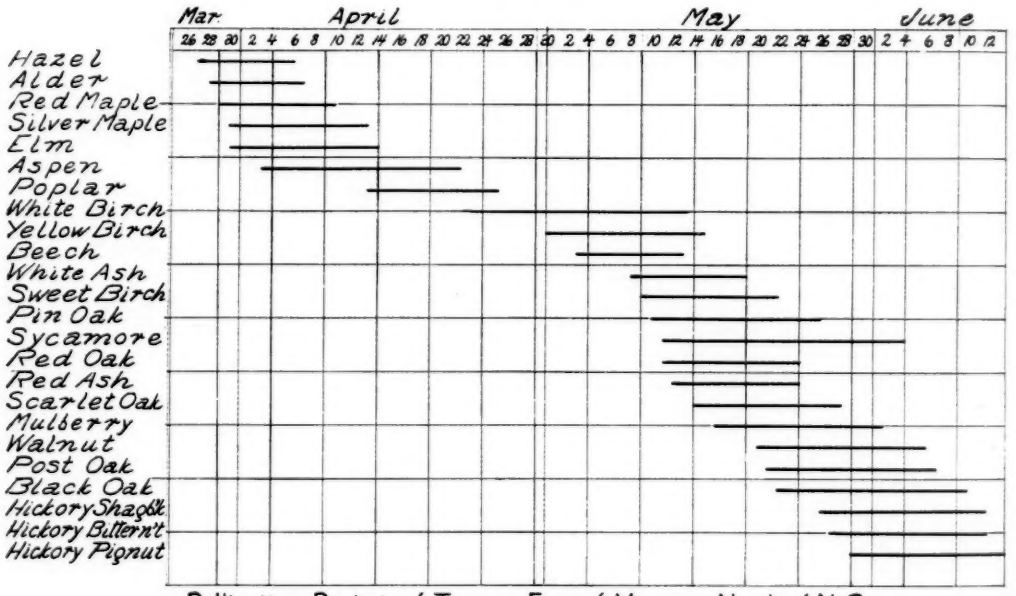
There are other important facts connected with pollen laden air. Significant hourly fluctuations occur. The highest pollen counts are encountered in the early morning, the low-

*Merriman has recently published **The Flora of Richmond and Vicinity.** This little work unfortunately contains nothing about the trees or the grasses.

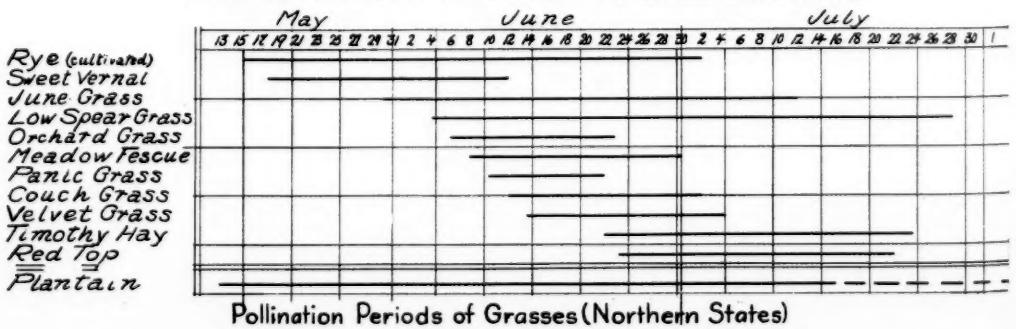
†The tree population of Richmond now consists chiefly of pin oaks, maples and elms, though there are still many of the old trees left—cottonwoods, ginkgos, mulberries, sycamores, poplars, catalpas.

est after midnight. Sunshine, wind and rain are important factors. Daily fluctuations are more easily appreciated. Here the causes are also meteorological. High winds bring pollen clouds and hay fever distress. The falling barometer preceeding the storm is keenly felt by the hay fever sufferer. Rain clears the air. Cloudy days, still clear days after a storm, are periods of low pollen count. Finally seasonal fluctuations have to be reckoned with. Weather




Pollination Periods of Trees East of Miss. and North of N.C.




Pollination Periods of Grasses (Northern States)

that is good for agriculture produces fine abundant grasses and bumper crops of ragweed. There are probably other as yet little understood factors which determine why hay fever varies from year to year.

We have made daily atmospheric counts during the last twelve months. The results have not been interesting except during the months from March to October. Vaseline coated slides were exposed for periods of twenty-four hours in a rain protected cover to lateral currents of air on the roof of a three story building. The slides were examined daily. As can be seen from the chart our first pollen was caught early in April and continued through May. The tree and grass seasons overlap on this chart. The highest count was 320. Pine and maple were the predominating tree pollens. The ragweed season was late this year as can also be observed on the chart. The counts around Labor Day (September 7th) were enormously high for this region. It was at this time that several of our cases complained of eye and nasal irritation.

A comparison of our pollen count chart with Richmond weather conditions in August and September discloses well known but interesting facts. From the 19th of August to the 1st of September there were only two days which were not cloudy, and only three days in which there was not some rain. The average velocity of the wind was not great. These facts probably account for the rather late appearance of pollen upon the exposed slides and the tardy development of symptoms in hay fever patients. As a matter of fact we did not get ragweed pollen until the first of September. September was ushered in with clear weather, sunshine and southwest winds of moderately high velocity. On the second of September the average hourly velocity was 10.7 miles per hour and on this day we experienced our first high counts. Although from the second to the seventh it was fairly windy, this fact alone is not believed to be sufficient to account for the extremely high pollen counts gotten between September 6th and September 8th, when counts of 450 to 700 were registered—counts comparable to those obtained in the western cities. On the ninth and tenth the wind dropped to a little over two miles an hour and the pollen count showed a correspondingly sharp decline. The twelfth was another windy day with an average hourly velocity of 12.6 miles an hour, which corresponds to another peak in the curve. Pollen almost completely disappeared from the air this year after September 20th. Our first frost came October 15th and we did not have a killing frost until November 3rd. Obviously the usual statement that hay fever continues until frost is not strictly true.

Another important fact bearing upon hay fever in cities is the relative frequency of vacant lots, harboring weeds and grass, to the so-called built up area. It is claimed by the Richmond Department of Building that only from 15 to 20 per cent of the corporate area of the city falls into the class of unimproved property. Many cities and some states have weed laws. We have one in Richmond. Naturally the crux of the matter lies in the enforcement of the law. That we have a particularly fine stand of weeds on most of our vacant lots this year, any one who cares to keep his eyes open will notice. Our ineffective city ordinance reads: "When so required by the chief health officer of the city, all owners of vacant lots or vacant portions of lots within the city of Richmond, within five days after receiving such notice, shall remove weeds or like vegetable growth from such lots."

A brief analysis of a small series of thirty-four recent cases of hay fever has been attempted. This study discloses the decided predominance of the fall type, with ragweed as the chief offender. Eighty-two per cent of our cases were due to weeds, 15 per cent to grasses, and 3 per cent to trees. Richmond is essentially a community of weed induced hay fever. When the analysis of these cases is further considered it appears that practically all of the cases sensitive to weeds give skin reactions also to grasses. Some cases with symptoms occurring only in the fall react fully as strongly to the grasses, indicating the undesirability of being guided entirely by skin tests in the choice of a prophylactic pollen extract, and of the great importance of considering the history of the attacks in the knowledge of the local flora and respective seasons of pollination. One case actually reacted more strongly to ragweed and cocklebur than to red top, with the clinical symptoms, however, occurring only in the spring. Skin sensitization, therefore, does not necessarily parallel mucous membrane sensitization. None of our cases have reacted positively to plantain, held by some allergists to produce 3 to 4 per cent of hay fever. Goldenrod, sunflower, daisy, dandelion, have seldom reacted. Crab grass appears

to be a serious offender in this locality. The frequency with which the ragweed sensitive patient reacts to cocklebur affords an interesting example of group sensitization, both belonging to the *ambrosiaceae*. This cross group type of reaction is most beautifully seen in the case of the grasses. Advantage is taken of this fact when timothy extract alone is used in the treatment of all types of late spring hay fever.

In spite of the fact that pollen was at times very heavy in the air in Richmond this fall, our therapeutic results are believed to be the best we have ever had. Yet from various sources this has been reported as one of our worst recent hay fever seasons. No patients receiving adequate dosage failed to get satisfactory relief—all except two or three got almost complete relief. These results are attributed (1) To the use of a freshly made potent extract, kept in concentrated solution and preserved on ice. (2) To early starts in desensitization. (3) To individualization of doses. Generally speaking, two doses were administered a week, but several cases had to have daily doses, and one for a while received two doses a day. (4) To the really high total quantity of concentrated extract given (1 c.c. of a 1-100 solution was the desideratum in each case,—two and a half times the maximum dosage in the Mulford schedule. One case was worked up to 2 c.c. of the dilution). (5) Finally to co-seasonal as well as pre-seasonal treatment.

Reactions: Five patients this year experienced severe reactions, consisting of generalized urticaria, redness and weeping of the eyes, and asthma. One or two were alarming. The literature on the subject contains the reports of several fatal accidents from this cause. The reactions we have had this year also point to the necessity for extreme caution in preliminary testing, careful graduation of dosage, the prudence of having adrenalin always at hand, and the hazard of allowing patients to carry on their own treatments.

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## IODINE FAST HYPERTHYROIDISM—A PROBLEM IN THE TREATMENT OF GOITER.*

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### Chemistry of Thyroid Iodine Compounds

Medical history records no more interesting chapter than that dealing with iodine and its relationship to goiter. Courtois discovered iodine in 1812. Straub, of Berne, was quick to suggest that it was the active principle of sea sponges and other medicaments which had been used therapeutically for thyroid disease from early times. Coindet in 1820 isolated iodine from the thyroid and made some effort at its rational use as a drug. Prevost in 1849 and Chatin in 1851 first hypothesized lack of iodine in food as a cause of goiter. Chatin went so far as to administer iodine in salt as a prophylactic to school children, thus anticipating the work of Marine and Kimball by sixty-five years. A more exact chemical knowledge of the state of iodine in the thyroid began with Baumann who in 1895 isolated iodothyrin as the iodine component. Almost concurrently Oswald separated from the gland, thyroglobulin, an iodine containing protein, and nucleoproteid, non-iodine containing.

Kendall in 1914 isolated thyroxin and subsequently determined its structural formula as trihydro-4-5-6 triiodo-2-oxybetaindolpropionic acid. In conjunction with Plummer it was determined to be the active principle of the thyroid gland. Quantitative physiological chemical methods show that the amount of thyroxin in the tissues of an adult averages 14 mg. There is a daily exhaustion of 0.75 mg. Under normal conditions a shift of 1 mg. of thyroxin is followed by a shift of the basal metabolic rate of 2 to 3 per cent. One mg. of thyroxin is contained in 15 grains of desiccated thyroid.

### Effect of Iodine on the Thyroid Gland and Goiter

From animal experimentation we learn much that is illuminating but at the same time confusing. Halsted in 1884 found that partial removal of the thyroid in dogs was followed by hypertrophy of the remaining portion. Later he had difficulty in confirming his experiments. Else has shown that in dogs after lobectomy,

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regenerative changes in the gland are complete in three or four weeks if iodine is given. Otherwise excessive hyperplasia occurs. Mosser, also working with dogs, found that iodine stimulates the cells to produce colloid, which, upon distending the acini, flattens the cells. Prolonged iodine administration produces an exhaustion of the gland with degenerative changes in the cells.

Loeb on the other hand found that in guinea pigs, potassium iodide instead of diminishing the activity of the thyroid, stimulated it to activity. Here the colloid, instead of becoming thicker and hard, was rendered soft and the cells became enlarged. Mitoses were more frequent. Thyroid extract and anterior pituitary substance were found to inhibit this hyperplasia. Breitner from his summary of experimental evidence concludes that iodine always works against the normal "functional direction" of the thyroid gland. If it is poor in colloid, iodine enriches it. If there is excessive colloid, iodine causes its diminution.

Marine has shown that iodine is necessary for thyroid function. When the store of iodine in the body falls below normal, the gland responds by hyperplasia. Iodine administered under such conditions causes a regression with return of the cells to a normal resting condition. Upon feeding iodine to dogs, the thyroid colloid becomes hard, the epithelium compressed and flat. In dogs hyperplastic goiters are transformed into colloid resting goiters. Desiccated thyroid and thyroxin act similarly.

The normal human thyroid apparently is affected by iodine in a manner similar to that of the dog but discrepancies in reports show that this statement cannot yet be accepted with finality.

In colloid goiter the iodine effect is a diminution in the volume of intra-acinar colloid. It becomes harder and thicker. Thus the total volume of the goiter is diminished.

Plummer in 1922 marked an epoch in the history of thyroid disease, when he showed that the administration of iodine in early diffuse hyperplastic (exophthalmic) goiter almost uniformly brings about improvement. It reduces, at least temporarily, the basal metabolism and other evidences of toxicosis. Marine, Caylor, Giordano, Graham, Cattell, Rienhoff and Lewis have described the histologic changes accompanying the regressive process in the gland. The acini become distended with solid, hard colloid, infoldings are to some extent obliterated and the epithelium flattened. The connective tissue is increased. Hellwig denies most of these changes, finding that the hyperplasia persists, and merely the consistency of the colloid changes. DeCourcy and others feel that the regression in symptoms follows the increased intra-acinar pressure of the colloid, in consequence of which the secretion of thyroxin is impeded. Plummer and Kendall feel that in diffuse hyperplastic goiter an abnormal chemical variant of thyroxin (an incomplete molecule) is at fault. Iodine acts by converting this agent into thyroxin. Likewise, these authors claim that hyperfunctioning adenomatous goiter presents essentially an excessive secretion of normal thyroxin.

From the beginning, Plummer maintained that hyperfunctioning nodular goiter was resistant to iodine and that the prolonged administration of Lugol's solution to non-toxic adenomas might light them up to toxic activity. This is in accord with the admonition of Kocher many years ago that iodine given patients with nodular goiter would produce a condition of hyperthryroidism which he called Iod-Basedow. I will not enter into the subject of the involution concept of hyperthyroidism as advanced by Rienhoff, Cattell, Graham and others. This attempts to prove that exophthalmic goiter and hyperfunctioning adenomatous goiter are different phases of the same disease. Its relation to the iodine problem is of no great moment, as with few exceptions nodular goiter when hyperfunctioning does not respond well to iodine medication. If it does, the chances are that diffuse hyperplastic disease is also present.

### Indications for the Use of Iodine in Treatment

We find that at the present time iodine therapy in thyroid disease can be administered with four clinical objectives: in the prenatal, juvenile and adolescent prophylaxis of colloid and adenomatous goiter; in the treatment of adolescent colloid goiter; in the pre-operative and post-operative management of exophthalmic goiter; and possibly at times in the treatment of persistent and recurrent hyperthyroidism after operation.

In general, we may say that the prolonged administration of iodine in the treatment of any type of goiter in adult life is contraindi-

cated and not without danger. Especially is this true in the case of nodular thyroid disease. The use of iodine in the goiter of pregnancy is a moot point. It should certainly be given with caution, especially during the latter part of gestation, or one will encounter the danger of aggravating hyperthyroidism. In spite of the fact that these principles are repeatedly enunciated by writers on thyroid disease, we find them over and over again violated in daily general practice.

### Iodine Fast Hyperthyroidism

Plummer early taught that iodine in exophthalmic goiter did not effect a cure. While the lowering of metabolic rate, the diminution of tachycardia, of nervousness and tremor, and increase of weight and strength, which accompany the iodine involution, may persist for weeks or months, the iodine regression pathologically and clinically is never complete. Residual areas of hyperplastic tissue sooner or later becomes hyperactive and the patient suffers an exacerbation of symptoms. When this occurs, we find that the patient has become tolerant to iodine and that its administration is not accompanied by the striking results noted during the first period of application. To use a term introduced by Jackson, the patient has become "iodine fast."

Occasionally we encounter frank exophthalmic goiter which is irresponsive to iodine. In other cases the response is relatively slight. Likewise, long standing exophthalmic goiter which has undergone repeated exacerbations and spontaneous involution loses its iodine sensitivity more and more with each flare of toxicity. The longer the duration of the disease, therefore, the more likelihood of the occurrence of iodine fast hyperthyroidism. Especially is this true if the patient has been treated with repeated courses of iodine in various forms. As we have mentioned above, pure toxic adenomatous goiter is irresponsive to iodine and thus may also be classed as iodine fast. The clinical management of hyperfunctioning nodular goiter and iodine fast exophthalmic disease is not dissimilar, but in this paper I shall deal only with the features of the latter group of cases.

### Clinical Features of Iodine Fast Goiter

These iodine fast thyroids constitute possibly the greatest problem today in treating goitrous disease. Hyperthyroidism has usually been present for a long period of time with many intervals of crisis and remission. In the nodular types a non-toxic condition has existed on an average of sixteen years, when an insidious tachycardia, gradual loss of weight, and a moderate degree of nervousness tell the patient that something is wrong. In many instances there is a history of prolonged and repeated iodine administration. In cases of frank exophthalmic goiter this at first brought about amelioration of symptoms but at a later date the beneficial effect of iodine could not be obtained. The basal metabolic rate is frequently lower than it was at an earlier epoch in the disease. However, the smoldering fires of this prolonged hyperthyroidism have gradually brought about cardiovascular and visceral changes from which complete recovery is difficult to obtain. In these cases we frequently meet cardiac enlargement, decompensation with auricular fibrillation, nephritis, hepatitis (at times with an ominous jaundice), and extreme mental instability. Often there is marked disproportion between the various components of hyperthyroidism. For instance, the basal rate may run low or even normal but cardiac instability and nervousness are extreme. The post-operative reaction may be utterly out of harmony with the basal rate and, in predicting what this reaction will be, we must pay more attention to the general physical condition of the patient than to any single laboratory finding. Certain of the cases of "apathetic thyroidism" which Lahey has described may belong to this group. General weakness and marked fatigue are prominent features and may go with a fairly well maintained weight.

In treatment, the resources of the surgeon, internist, anesthetist, and nursing staff must be zealously coordinated. We are certain to encounter most of the hazards that faced us before the introduction of iodine therapy. During the past few years I have had to deal with twenty-three cases of such iodine fast hyperthyroidism, not including those cases classed as hyperfunctioning or toxic adenomas unassociated with hyperplastic goiter. These latter perhaps should have been included also, but, as I attempt to follow Plummer's classification, I have purposely avoided including them. Thus the cases presented, granting that the differential diagnosis has been properly made, are for the most part instances of long standing "trained goiter" or Graves' disease.

The thyrotoxicosis in these patients was estimated as moderately severe in thirteen and very severe in ten. There were twenty women and three men, their ages varying from twenty-two to sixty-two years. In five cases we were forced to operate with a basal rate above 50 per cent, this after long treatment. In most instances it was over 40 per cent. A few patients presented metabolic rates much lower. Many of them fluctuated up and down with successive readings, refusing to become stabilized during the pre-operative period. Even the patients with low rates presented such features in the post-operative course as to arouse apprehension in an extreme degree.

Iodine was routinely given in pre-operative treatment. At times there was a definite lowering of the metabolic rate (less than 15 per cent in eleven cases) but the cardiovascular and neurological features of hyperthyroidism seemed to be as a rule affected to a lesser degree. Fluctuation of the metabolic readings as noted above was remarkable at times and in two instances the rate was raised to a higher level during iodine therapy. The question is raised as to how long one should persist in iodine medication in these cases. I have had no fixed course but have gained the strong impression that if the beneficial effect of iodine is not obtained in three weeks, its further usage will be of no avail. Intravenous iodide of soda was tried in two refractory cases without appreciable effect. Likewise, increase of the dosage of Lugol's solution beyond the usual 40 to 50 minim daily dose was unattended with benefit.

Ligation has been practiced in five cases as a preliminary to lobectomy. No benefit from this was noted but I have felt that it gave me an opportunity to estimate the reaction which might be expected from lobectomy. Hemilobectomy as advocated by Lahey, Hertzler, Jackson and others was done in a few instances, the second lobe being removed successfully after an interval of several weeks. In three cases the patients did so poorly on the table that operation had to be interrupted, the wound packed with acriflavine gauze and secondarily sutured.

Radiation according to the history had been used in six cases before coming under observation. Furthermore, we had X-ray treatment administered to three cases in an effort to lessen the hyperthyroid state. In neither instance was definite benefit noted.

The general plan of treatment has consisted of prolonged bed rest, isolation from visitors, the avoidance of excitement, a high carbohydrate diet, and the precordial application of the ice-bag. In spite of Plummer's admonition against the use of digitalis, I have up to the present continued to use it. This is done with caution and it is not given until twenty-four to forty-eight hours before operation, provided the heart is compensated. Digitalis certainly has little effect on the pulse rate, but it may increase myocardial tone and control post-operative fibrillation to some degree. Massive doses may mask the real condition of the heart and can produce a type of intoxication which adds to the hazard of the post-operative crisis.

The patient is kept in ignorance of the time of operation. We now use sodium isoamytal (nembutal) with morphine and atropine as a preliminary narcotic. Many patients with this treatment have no recollection of the operating room. Local infiltration anesthesia with novocaine, supplemented if necessary with nitrous oxide, is then used. Operation should be performed quickly and precisely. Hemostasis is all important as these patients stand blood loss poorly. Difficulties have been encountered here, as we frequently have had to deal with a gland which has the consistency of hard cheese and oozes profusely. The electric knife may ultimately solve the problem of the control of bleeding but from reports in the literature, such as that of Jackson, one is impressed with the increased incidence of secondary hemorrhage. Gentle and careful application of clamps and suture will usually control gross bleeding at operation and we have found small acriflavine packs of distinct benefit in taking care of minor oozing after suture of the capsule. Transfusion may have to be resorted to but has the hazard of a possible reaction which may tilt the balance against recovery.

The patients of this group almost uniformly went through operation nicely, but it was the post-operative crisis which gave us grave concern. The pre-operative pulse rate of all was notably unstable and in nineteen cases averaged at bed rest over 100 per minute. In nine, it was over 120 per minute. Eight patients pre-operatively had periods of fibrillation which were controlled with difficulty by digitalis or quinidine treatment. All of them ran a pulse of 120 per minute for some days after operation. In eleven cases the rate exceeded 150

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per minute and in five it reached 170 or became uncountable. Fibrillation occurred in ten instances during the second and third days and in five persisted to some degree for a period of a week. The benefit of digitalis again is open to question, but I have felt that it has had some value and has not at least been harmful.

Hyperpyrexia has been a variable feature. Four patients had temperature elevation to 105 degrees or more. In ten the fever passed 103 degrees, while in only two cases did it fail to rise to 102 degrees. Six patients developed definite delirium during the post-operative course, while most of them showed a marked degree of nervous instability.

I have been impressed with the fact that patients with iodine fast hyperthyroidism recovered more slowly over a period of days from their post-operative reaction, as evidenced by the pulse and temperature curve, than those who had pre-operatively made the classical remission on iodine treatment.

During the post-operative period iodine is further administered by mouth and rectum. Morphine should be given in sufficient amount to keep the patient quiet. Fluids in abundance are given by mouth, subcutaneously, and by rectum. I avoid intravenous therapy if possible for the fear of an occasional reaction. Ice-bags are routinely applied. If extreme hyperpyrexia occurs, an ice pack, consisting of eight to twelve ice-bags flanked around the patient, has been of definite value in lowering the temperature several degrees. The pack is removed when the temperature is around 103 degrees or if the patient shows any untoward symptoms attributable thereto. Recently we have used the oxygen tent and shall use it again as it seems to be of distinct benefit, especially if there is dyspnoea, cyanosis, or other evidence of cardiac embarrassment. I have not for reasons mentioned above used glucose intravenously in these cases. Rogers feels that there is poor mobilization of glucose in the body during the post-operative crisis. Likewise, I have had no experience with the intravenous use of thyroid residue, thyroxin, or sodium iodide. Isolated instances of their possible benefit in this form of intoxication are noted in current literature.

As to end results, no deaths from lobectomy were encountered. One patient, a desperate risk with indeterminate elevated metabolism and who remained in a state bordering upon crisis over a period of months, was subjected to ligation as a last resort. This woman presented in extreme degree all the features of the iodine resistant group. She died several days following ligation. The clinical course of the remaining patients, all of whom recovered after lobectomy, has been generally satisfactory. Two had mild persistent hyperthyroidism. One of these gradually improved on iodine therapy. The other required a second operation but obtained relief. Another patient had a mild recurrence of hyperthyroidism but this subsided after several months of rest. Iodine was given but it is difficult to evaluate its role in the treatment of such cases. With these exceptions the basal rate and general symptoms of thyrotoxicosis have uniformly subsided. However, I am impressed with the fact that many patients of this group still show some degree of cardiac instability and are prone to periods of nervousness. They seem slightly under par when compared with those patients with exophthalmic goiter who were operated upon after a favorable response to iodine before operation. Eleven patients who had definite cardiac hypertrophy before operation still present some degree of cardiac enlargement. One recalls the teaching of Lahey that the goiter heart is largely the heart of over-work hypertrophy: that thyrotoxicosis brings about little specific pathologic change in the myocardium. The stimulus to overwork being removed, such a heart may readjust itself toward normalcy in a remarkable degree. My own experience with these few cases of prolonged hyperthyroidism tends to confirm this view. Most of these patients have been restored to a fair degree of health.

However, in three instances nephritis and hypertensive cardiovascular disease have persisted, and one patient died of nephritis two years after thyroidectomy. Another died of myocardial decompensation two years after operation. Her basal rate had been normal but her cardiovascular system never readjusted itself.

In conclusion, iodine fast hyperthyroidism presents a difficult problem when encountered in its more severe forms. So far as treatment is concerned, the surgeon is called upon to use all of those assets which served to cut down the mortality from operation ten years ago, a time before Lugol's solution became popular with the profession and iodine in kitchen salt

popular with the layman. This phase of thyrotoxicosis can be prevented if the surgical removal of nodular goiter is advocated before it has become toxic and if the family physician will refuse to administer iodine to adults with goiter, exophthalmic or otherwise, unless he does so after the surgeon has been consulted and operation at an early date decided upon.

Certainly there are those who will take exception to this view as being too radical. X-ray undoubtedly in many instances of Graves' disease causes amelioration of symptoms and even cures. In mild or transient exophthalmic goiter even iodine may effect a cure in isolated cases. Hyperthyroidism may burn itself out and on prolonged rest may occasionally undergo spontaneous cure.

However, I believe, the surgeon still offers most to the thyrotoxic with least ultimate hazard. Medical measures place upon the physician the burden of proving after long maintained cooperation of his patient that the cure is complete, permanent, and not an involution of partial degree. When symptoms do recur, as all too frequently happens, the likelihood is that the thyrotoxicosis will be found iodine fast.

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# GASTRIC CANCER.*

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DEATHS—REGISTRATION AREA OF UNITED STATES

| | 1925 | 1926 | 1927 | 1928 | 1929 |
|---|---|---|---|---|---|
| All Causes—Total | 1 219,019 | 1,285,927 | 1,236,949 | 1,378,675 | 1,386,363 |
| Cancer | 95.504 | 99,833 | 103.578 | 109,770 | 111,569 |
| Cancer of stomach and liver | 34.874 | 35,694 | 36,874 | 38,128 | 37,915 |
| Diseases of the Heart | 191,226 | 209,370 | 211,976 | 237,849 | 245,244 |
| Nephritis (acute and chronic) | 99,320 | 103,332 | 100,163 | 108,813 | 106,056 |
| Cerebral hemorrhage and softening of the brain | 87,064 | 90,832 | 91,001 | 99,624 | 100,061 |
| Pneumonia (all forms) | 96 432 | 107,597 | 87,230 | 112,195 | 106,597 |
| Tuberculosis (all forms) | 89.268 | 91,568 | 87,567 | 90,659 | 88 352 |

| Age group 45-65 years | 1925 | 1926 | 1927 | 1928 |
|---|---|---|---|---|
| All Causes—Total | 293,368 | 313,146 | 308,758 | 344,121 |
| Cancer | 41,730 | 43 328 | 44 431 | 47,115 |
| Cancer of stomach and liver | 15,013 | 15,177 | 15,403 | 15,914 |
| Diseases of the heart | 57,842 | 63,125 | 64 404 | 71,796 |
| Nephritis (acute and chronic) | 31,808 | 32,814 | 31,943 | 34,717 |
| Cerebral hemorrhage and softening of the brain | 26,329 | 27 506 | 27,493 | 30,393 |
| Pneumonia (all forms) | 18,073 | 20,254 | 17,120 | 21,970 |
| Tuberculosis (all forms) | 18,980 | 19,851 | 18,894 | 20,114 |

From the above we see that in 1929 cancer is second in mortality, and cancer of the liver and stomach represent about one-third of all cancers.

## GASTRIC CANCER AND GASTRIC ULCER

Statistics show that 3 per cent to 5 per cent of all autopsies reveal healed or unhealed gastric ulcers. Three per cent of 120,000,000 = 3,600,000. According to these figures, we have 3,600,000 gastric ulcers in the United States.

We have about 38,000 annual deaths from cancer of the liver and stomach in the registration area of the United States. From these figures, if all gastric cancers originate from gastric ulcers, we have about 10 per cent of gastric ulcers degenerating into cancer.

Many surgeons claim that 20 per cent of gastric ulcers become cancers.

The initial stage of ulcer is a devitalization of a cell or cells.

Cancer is characterized by division and multiplication of cells. One is the destruction of cells, the other an abnormal growth of cells.

Gastric ulcers may occur at any age, but the majority occur between the ages of twenty to forty.

Gastric cancers occur more frequently after the thirty-sixth year.

We find more gastric ulcers in women than men, and more gastric cancers in men than women.

Cancer is the most important and most dreaded problem that confronts the gastro-enterologist. It kills more people than all other diseases of the stomach, it is constantly increasing in all civilized countries, it is the most difficult disease to diagnose in its early stages and, unless diagnosed early, treatment is only palliative.

*Location.* — Rehfuss believes that three-fourths of all gastric carcinomas involve the pylorus, antrum and lesser curvature. This opinion seems to be concurred in by practically all writers on the subject.

Many *causes* of gastric cancer have been suggested, though no specific cause has been found. Trauma is accepted by most writers as a contributing cause.

All pathologists agree that gastric ulcer is the starting point of many gastric cancers.

McCarty says that he has never found epi-

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thelial rests that could be scientifically stated as prenatal. He thinks that the gastric cancer cell arises from the intraglandular hyperplastic cells of the mucosa, and represents a malignant end change of the process of hyperplasia of the normal cells. He also claims that in 70 per cent of chronic peptic ulcers, cells can be found resembling cancer.

We have seen many cases giving a clinical history of gastric ulcer that extended over a period of years, with weeks of activity and months of rest, with a recent flare-up of gastric symptoms and a well-defined mass in the epigastrium—a typical clinical picture of gastric cancer. This is suggestive if not conclusive evidence that an ulcer was the cause of the cancer.

Again, we see cases of gastric cancer with rapid development and no clinical evidence of previous peptic ulcer.

Pathologists have practically proven that cancer begins in a normal cell in an abnormal environment.

So far as we know, there is no limit to the growth of a cell fed by a favorable medium, except the resistance offered by surrounding objects.

Trauma (mechanical, chemical, thermal) can change the environment of a cell and may contribute to an alteration of the pH of the surrounding medium. We are still in the dark as to a definite cause.

*Symptoms.*—It is hardly necessary to dwell on the symptoms of gastric cancer. As we generally see them, they are too far advanced to hope for a cure.

Rehfuss advises an annual X-ray of the gastro-intestinal tract for every one after reaching the cancer age. This is good advice but the majority of people cannot afford the expense. If this could be done most gastric cancers could be diagnosed during the rest period and cured by surgery.

All gastric ulcers should be re-rayed after two weeks treatment. If they do not show marked improvement after two weeks an operation should be considered. This is our only hope of decreasing the mortality with our present knowledge.

The symptoms in brief are:

1. Nausea.
2. Gastric pain and distress.
3. Regurgitation and vomiting.
4. Gastrorrhagia, hematamesis, melana and occult blood.
5. General cachexia, emaciation, and mass in epigastrium.

At present we know of no laboratory or clinical test by which we can diagnose gastric cancer in its incipiency except the X-ray, and until a defect in the gastric contour can be demonstrated by the X-ray this method also fails to reveal the presence of multiplying cells. Of course if there is a defect it may not be cancer, and this question must be worked out by exclusion.

We are still hopeful that bio-chemistry will some time find the solution of early diagnosis.

*Treatment.*—"Surgery and radiation at the present time are the only responsible, available measures for the treatment of cancer, and with them the very best we can hope is to cure one-third of all cancer cases, obviously a confession of failure." (Ellice McDonald's address before the American Phar. Assn., Philadelphia, April 14, 1931).

Dr. Horsley says, "If removal of so-called precancerous lesions elsewhere in the body is a good policy, this should be eminently a proper procedure in ulcers of the stomach that do not respond readily to competent medical treatment."

Dr. McDonald outlines the basis of the work being done in the cancer Research Laboratories Graduate School of Medicine, University of Pennsylvania:

"In consideration of alteration in cellular reactions, the environmental phase is of the greatest importance because alterations in this phase determine the reactions of the cell, and through this phase must go any influence, excepting radiation, which will prevent the cell division or cure cancer.

"In our laboratories, we have shown that in general cancer blood plasma there is a relative alkalinity amounting, in untreated internal cancers, to a change from normal pH 7.38 to pH. 7.47, or approximately 18.7 per cent more alkaline. These changes of pH may seem small to the chemist but they are enormous to the biologist.

"The more alkaline the blood plasma pH of the untreated patient, the quicker the disease kills.

"Cancer patients have relatively more sugar in their blood than normal, and, generally

speaking, the more sugar in their blood, the worse is their expectation of life.

"Cancer cells have relatively less calcium than normal and relatively more potassium, and, with increase of potassium content, there is an increase of the virulence of the tumor, or the virulence of the tumor is (in part, at least) a function of the potassium content. In our own laboratories, we have often found that, in spontaneous mouse tumors, calcium salts have an inhibiting influence on the growth of tumor.

"With these few facts, we can begin to state the direction in which research must tend. In order to have a cure of cancer, conditions must be produced which will: (1) alter glycogenolysis toward normal from the cancer type; (2) produce conditions of biological equilibrium towards normal from the alkaline state (pH 7.47 in internal untreated cancer blood plasm); (3) reduce the high blood glucose; (4) produce a calcium-like effect; (5) reduce or prevent the postassium-like effect.

"The criteria are few, but at present these are the sole criteria for a cancer cure and the future will lay down more and more specifications until these become so obvious to some genius, who will say that with those specifications the answer can only be one thing to satisfy all the requirements."

He predicts that some time we shall have a chemical cure for cancer. I wish here to thank Dr. McDonald for his reprints and for the valuable work he has done and is doing in cancer research.

Though we know the case is hopeless, there is much for the physician to do.

Local care of the stomach, lavage when necessary to remove accumulation in the stomach, and antiseptics to reduce fermentation and infection, should each be borne in mind. Dietetics, remembering the fact that gastric function is generally below par, is an important consideration.

Drugs should be used to meet symptoms as they arise, such as nausea, flatulence, heartburn, constipation or diarrhea.

Pain may be controlled by hot applications or suppositories, the hypodermic when necessary.

Physicians still have a responsible mission in making the last days of the hopeless victims more bearable. Let us make them as comfortable as possible, relieve every unpleasant symptom that we can, cheer them as much as is within our power, and as the end approaches do not let them suffer.

204 *East Franklin Street.*

DISCUSSION

DR. J. SHELTON HORSLEY, Richmond: I think this paper is most timely, because of the fact that cancer is decidedly on the increase. There are several reasons for that, but we have not time to go into them. One obvious reason is that the expectancy of life has increased, and more people are getting into what Dr. Harvey Cushing calls the "tropic of cancer" than heretofore.

As Dr. Burke tells you, there are over a hundred thousand deaths from cancer every year. For every death there are probably three other cases. Of this enormous mortality, which we view with considerable complacency, about one-third is from cancer of the stomach and liver. There are two forms of treatment for cancer—surgery and radiation. In cancer of the stomach surgery alone is indicated. The only cure for cancer of the stomach is partial gastrectomy. The first thing is to make an early diagnosis. Any person upwards of thirty-five years of age, particularly a man who has "indigestion," should have a thorough examination by a competent radiologist if his family doctor cannot find the cause and relieve his symptoms in two or three weeks. I say "competent" advisedly, because a "half-baked" radiologist is worse than none in a case of this kind. If there is chronic indigestion or "stomach trouble" it should be cleared up in the same way.

About one-fourth of all gastric cancers apparently come from a peptic ulcer of the stomach or from some benign lesion that has previously given symptoms for a good many months or years. It is this type, while in the minority, that demands particular attention because the lesion can often be removed by excision before cancer occurs. Ulcer of the duodenum practically never turns into cancer, but gastric peptic ulcers may become cancer. Just what proportion of gastric peptic ulcers develop into cancer it is difficult to say, but every experienced pathologist acknowledges that this does occur. Sometimes it may be years before cancer develops from an ulcer, but why wait for this to happen? If a gastric ulcer cannot be cured or markedly benefited by medical treatment within a few weeks it should be excised. In this way we could certainly help that type of cases in which there have been prolonged symptoms before cancer occurs.

In three-fourths of gastric cancers the symptoms appear suddenly. We know that elsewhere in the body cancer never arises from perfectly healthy tissue. There is always some lesion, such as an ulcer, a point of chronic irritation, adenoma and papilloma, from which it springs. The proctologists tell us that their examinations of the rectum and sigmoid show that many adenomas or ulcers in this region become cancerous. In the stomach there is a large silent area where a lesion may exist without causing any symptoms whatever unless there is hemorrhage, perforation, obstruction or peritonitis. Only along the lesser curvature of the stomach or in the pyloric region would a benign lesion be likely to cause symptoms. If we had a wart on the back of the neck and it was not inflamed or did not bleed we would not know it was there unless someone told us about it, and so there may be these benign lesions in the silent area of the stomach that exist for years with-

out giving symptoms until they break down into cancer.

The important point in cutting down this terrific mortality rate from cancer of the stomach is to make an early diagnosis and to have the growth excised as early as possible. There is no known cure for cancer of the stomach except excision.

Saltzstein and Sandweiss reported 365 necropsies on patients who died from cancer of the stomach in Detroit, and have shown that about one-third of all deaths in that city from cancer were from gastric cancer, and that about one-fourth of these gave a prolonged history of symptoms. One of the chief causes of death from cancer of the stomach is perforation and peritonitis, and, according to Dr. Margaret Warwick, who reported necropsies from the University of Minnesota on 176 cases, *at necropsy 23 per cent of the cases showed that the disease was still confined to the stomach.* Of course some of these were in inaccessible regions, but as cancer most frequently occurs along the lesser curvature and in the pylorus, most of these cancers might have been surgically removed. In Saltzstein and Sandweiss' report there were only *7.7 per cent of the cases operated upon for removal of the cancer.* This is impressive when we see from these statistics that 23 per cent of the cases showed at death no metastases outside of the stomach, and then that only 7 7 per cent have been operated upon for excision of the cancer.

Early diagnosis and partial gastrectomy are the only means by which we can cure cancer of the stomach, and every symptom of either chronic or recent indigestion in any one past thirty-five years of age should be considered seriously until its cause is definitely cleared up.

NOTE.—Dr. Horsley illustrated the above discussion with lantern slides.

DR. CARRINGTON WILLIAMS, Richmond: I think Dr. Burke has brought before the Society a very important subject. He has discussed the situation very thoroughly, and there are only two points I should like to add to what he has said. Those are, first, the symptoms of the disease, because on the basis of the symptoms must lie our diagnosis of the condition. The second point that I should like to make is in regard to the treatment of cancer of the stomach. As Dr. Burke has said, if you have a typical picture of cancer of the stomach, the chances are that the disease is so advanced that no treatment is worth while. So we have to look for the earliest symptoms. I have recently reviewed the cases of cancer of the stomach that have been under treatment at the McGuire Clinic for a period of years and found that only 15 per cent of the cases are removable. Of those cases, in almost half of them the first symptom was upper abdominal pain. Often there was no relation whatever to the intake of food, but they felt discomfort or pain of no typical character. But epigastric pain was the first symptom complained of in over half of them. The next symptom was rather vague indigestion, and then weakness. Those three symptoms were the ones complained of first. Accompanying these are almost invariably loss of weight and secondary anemia. So, if we expect to get these cases early enough to cure them, we must rely upon close clinical observation.

Now, in regard to treatment. There has been a great controversy about ulcer of the stomach and cancer of the stomach. You will find some people, Dr. McCarty, of the Mayo Clinic, is one, who say that propably 70 per cent of cancers of the stomach arise on the base of benign ulcers. On the other hand, some observers say no cancers arise on benign ulcers. But I see no reason why we can not almost conclude from those observations that malignant lesions can develop from benign lesions. If that is the case, then an ulcer that does not yield to treatment in a reasonable time should certainly be referred to the surgeon for removal. I do not think we should be discouraged by symptoms indicating an inoperable lesion, such as a mass in the epigastrium, etc. I remember one case of that kind operated upon by Dr. McGuire fifteen years ago, and that man is living and well today. Of course, you will not have many cases like that, but occasionally you will, and if you save even one it is worth while.

## GERIATRICS.*

JOHN R. HAMILTON, M. D., Nassawadox, Va.

In the beginning allow me to state that I do not feel that this paper touches upon a subject that has not been written about and recognized as a separate branch of medicine.

My purpose is to call your attention especially to this branch of medicine, believing firmly these three points: first, that errors in diagnosis and treatment are those of omission and not of commission; second, that with this branch of service in mind, a certain group of our patients will be better understood, diagnosed, and treated; and, finally, that we, as physicians, seeing the results, will incur more pleasure from our practice.

Geriatrics is defined as that department of medicine which treats the diseases of old age. It is not my intention to hold strictly to this definition but to include an understanding of the normal state of the aged both physically and mentally. Then, if we classify the period of old age as extending from sixty to one hundred, we should include a pre-geriatric group from forty through fifty-nine, during which period we should aim to establish a normal philosophy of life in which old age is rationally considered and evaluated. It is during this period that a rational attempt should be made to guide the patient so that a mode of life may be outlined which will permit him to sidestep the physical and mental hazards of old age. This mode of living will not alone produce a longer life-span in years but will aid materially in increasing the likelihood of his being both self-supporting and an active influence for good in his community.

As a basis for my remarks on this subject I have reviewed the first 2500 cases admitted to the Northampton Accomac Memorial Hospital with which I am associated. In review-

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Suffolk, Va., December 2, 1931.

ing these cases general principles will be stressed rather than minute details.

Taking the first 2500 admissions to the hospital and the 509 out-patients seen for examination at the request of physicians during the same period, the following facts are noted: there were 576 in the geriatric and pre-geriatric groups. In other words, one-fifth of the total number of cases, or one-fourth of the cases admitted even when the ear, nose, and throat department was excluded, were in these groups. Of the 509 out-patients seen, 135 were in these groups, again over one-fourth of the cases seen. These figures have been stated to bring out the frequency with which patients above forty years of age have been seen in hospital work, and, if these patients form such a large part of referred work, is not the statement justified that in private practice with its far-reaching field of activity they form a group proportionately large? Surely from a numerical standpoint they justify consideration as well as from the standpoint of good to the patient.

The first group considered will be those "forty to sixty," the pre-geriatric group. It is by working with this group that we may prevent many diseases of old age and prepare to treat those conditions that are inevitable. We may bring about the understanding of old age with its flagging desires and progressive fatigue as a normal phase of life to which all must inevitably yield. We may secure for them an uninterrupted continuation of their mental and spiritual evolution, while other functions are weakening, so that they may maintain the standing achieved during maturity rather than become economic encumbrances.

In the white females in this group, the outstanding conditions were gynecologic. Of 179 cases examined, thirty showed diseased cervices. While this condition is not often complained of *per se*, the relation of the condition of the cervix to the body as a whole is an important one. When diseased and symptomless it has been found to be a focus in rheumatism and neuritis, the cause of indefinite malaise, and loss of average vigor; it has been the cause of backache, and weight and discomfort in the pelvis. The discharge with its constant irritation has been the exciting factor in nervous breakdowns. The discharge has created a cancer-phobia which has caused untold mental strain in cases which have suffered for long periods before being examined. Some feared that all diseases of the cervix are cancerous. By early treatment we know, incidentally, that a great deal can be done toward the prevention of cancer of the cervix and by early examination many cancers of the cervix may be discovered while they may yet prove subject to successful treatment.

There were fifty-two diagnoses consisting of perineal lacerations, pregnancies, hemorrhoids, fibroids, pelvic inflammations, gonorrhea, cystoceles, rectoceles, hydatidiform mole, ovarian cysts and fecal impactions, making a total of eighty-two cases of the 179 in which a gynecologic and rectal examination proved to be essential.

Twenty-three diagnoses related to the cardio-vascular-renal syndrome: sixteen had diseased tonsils; ten suffered from vasomotor instability; nine had appendicitis; eight had gall-bladder diseases. The out-patient cases showed no different findings except that menopausal conditions were more prevalent. The colored females from forty through fifty-nine showed an increase in the number of cases of malignancy and lues.

In the 112 admissions of white males from forty through fifty-nine years of age, cardiac, genito-urinary tract diseases, appendicitis and accidents were most frequent. Of the fifty-three colored males of this group the predominating cause for admission was accidents. Lues, hypertrophied prostate, appendicitis, hypertension, and myocardial failure were the other out-standing conditions.

The forty-nine white males from forty to fifty-nine seen as out-patients brought forward conditions which, I believe, are best illustrated by a review of two cases.

J. L. W., was seen March 24, 1930, having been referred for examination by an ear, nose and throat specialist. White male, forty-seven; manager for a lumber company and hardware store.

*Present Illness:* Cough for a week; worse at night; two attacks each night; has slight sore throat and headache over eyes at times; very small amount of expectoration.

*Past History:* Pneumonia fourteen years ago. Cardio-respiratory: moderate shortness of breath; heart "flighty and jumpy." Gastro-intestinal: appetite poor. Genito-urinary: negative. Lost six pounds in last week.

*Examination:* General development fair. Head and neck: no pathology. Chest: Lungs

—few scattered rales between scapulae. Circulatory System: apex in fifth interspace nine cm. from mid-sternal line. Pulse seventy-two per minute. Blood pressure 120 over 80. Rate, rhythm and volume equal and regular; tone fair; no murmurs. Abdomen and Back: no pathology. Reflexes normal. X-ray of lungs negative for active tuberculosis. Laboratory work completely negative, including three examinations for tuberculosis.

The history of this patient from his family and personal acquaintances reveals that he had looked so badly for the past month and had such a harsh, brassy cough that they feared tuberculosis. Personally it was known that for the past six months he had been under a severe business strain. He admitted that for some months he had taken off two half days a week spending them hunting or golfing. He had enjoyed these sports five years ago but recently these strenuous short vacations had not made him feel any better.

He was advised to go alone to Florida and there to rest and just do nothing. He did this and returned symptomless and completely negative to examination. He has followed a less strenuous life with two weeks of restful vacation this year and is in splendid condition.

The point that I wish to bring out by this case is that what this patient needed was an adjustment to his age. At first it was hard for him to realize that two weeks of idleness in restful surroundings was needed rather than two weeks of vigorous duck shooting. He had to be shown that his body at forty-seven was in good condition if treated with due regard for its flagging energy.

The second case is that of a white male aged fifty-one, seen March 2, 1931. His occupation was clerical. His chief complaint was insomnia. Had had a pain in the back since January, 1931.

*Past History:* Influenza in 1918 and 1931; has not felt well since.

*Family History:* Cardio-vascular-renal tendency.

*Present Illness:* Head and neck negative. Cardio-respiratory system: moderate shortness of breath on occasions; more pronounced with excitement; palpitations worse when patient awakes at night. Gastro-intestinal: negative except for pain in right lower quadrant at times. Genito-urinary: nocturia once.

*Personal History:* Patient gets to thinking about business after 3 or 4 A. M. Has gained about twenty pounds in last ten years.

Examination showed teeth in poor condition. Circulatory system: Pulse—extra systole; heart—tone fair; no murmurs; apex fifth interspace ten cm. from mid-sternal line; blood pressure 142 over 100. Abdomen, back and extremities negative. Blood shows N. P. N. 46.2 mg. per 100 c.c.

It was known that this patient worked long hours at his office with no recreation. His diagnosis was dental caries with an early cardio-vascular-renal syndrome and nervous instability. It was suggested that he take a vacation and follow it with regular moderate exercise and develop a hobby. Since that time he has been seen socially on various occasions. He has not followed any of the suggestions. He is continually feeling worse and is more restless. He is undoubtedly driving his body physically and mentally to the point where it will collapse.

And now we come to the second large group of patients—those over sixty years of age; those in "the resting age." All down through history the aged have had few defenders and death has been pushed out of sight and thought with loathing and horror. This is certainly true of America where we have received as part of our heritage the record of the futile quest of Ponce de Leon for a fountain of youth. The following portions of a poet's account of this quest expresses to me this age-long despair and frustration:

"I girded my loins with cloth of gold,
My life was before me; my youth to hold.
I consecrated myself to the truth,
Of the secret of life, of the search for youth.
Till I came at last to the Everglades
Beneath whose skeleton moss grown shades
Somewhere the fountain of youth is hid.
I traversed each foot of the secret ground,
But the fountain of youth I never found,
I lost my quest, and my youth as well,
My strength and sureness. At last I fell."

Since the days of the Spanish conquerors there has been a great advancement in scientific knowledge and philosophy. We now realize that old age and death are inevitable and normal. We see ourselves instead as part of a great evolutionary scheme, each playing a small part which, when it has been completed, may be closed contentedly, knowing it has been a worthwhile unit in the advancement of the species.

Of the one hundred ninety-eight cases

from sixty to a hundred years, eighty were while females, ninety white males, seven colored females, and twenty-one colored males. There were fifty-three out-patients seen as follows: white females, fifteen; white males, thirty-seven; colored females, none; colored males, one.

In the white females of this group the two most common diseases were malignancy and diseases of the cardio-vascular-renal system.

In connection with the white females of sixty to a hundred I wish to present the case of Mrs. N. N., age seventy-nine, seen March 24, 1929. The admission note was as follows: Patient referred by Dr. X with a history of having had a growth removed from the face many years ago. Approximately a year ago she had a radical breast operation for cancer at another hospital. This had healed satisfactorily. Patient, after returning home, had had repeated spells of vomiting blood and passing blood by bowel. Has had terrific hemorrhages and has been in a critical condition for many months. Has not had a satisfactory bowel movement for three weeks. Patient very thin, cachectic, and anemic. Fatal prognosis has been given family. Detailed history and physical examination confirmed the admission note. The examination also showed a round hard mass in the lower left quadrant of the abdomen. A rectal examination revealed many large fecal impactions. Approximately twenty of these were removed with very little hemorrhage. The laboratory reports were as expected.

To make a long story short, on June 23, 1929, this patient was able to walk out of the hospital. One of the most important phases of her treatment was a change in environment and mental stimulus. I remember when first seeing the patient in consultation in her home, the house was darkened, the room dreary, and her hopes gone. In the hospital she was placed in a ward with its bustle, its comradeship, and its hopes and anticipations for return to active life. The student nurses became attached to her, took an interest in her appearance, joked with her, flattered her, and made her feel that she was included in the scheme of life. On June 5, 1930, after approximately a year of activity in her home neighborhood she had two large hemorrhages and died three days later. Yes, a fatal prognosis from the beginning, but, I believe, she and her friends enjoyed her last year of life as much as any other.

In reviewing the ninety white males above sixty, the outstanding conditions were hypertrophied prostates, myocardial failure, diabetes, apoplexy, accidents, malignancy, uremia, and nervous instability, placing cardio-vascular-renal disease and hypertrophied prostates as most common. These cases bring out the great importance of a routine examination of the prostate in view of early treatment and also because of its tendency to act as a focus of infection.

There is one more case I wish to cite because it illustrates that the diseases of old age are not necessarily fatal and that patients may be returned to activity and independence.

Mr. J. T., aged sixty-eight, a produce broker, was first seen by the surgical service on September 23, 1929. His chief complaints were itching, jaundice, chills, and fever. Had been itching for past forty hours. About eighteen months previous he had marked jaundice and itching, with chills and fever. Had been better since April. Stools were constipated at times; color varied. Urine varied in color. On examination the patient was found to be thin and emaciated and looked older than his age. The only positive finding was that the liver extended three fingers below the costal margin. X-ray revealed pathological gall-bladder. The laboratory findings were negative except for a mild hyperacidity. It appeared at that time that the condition was due to gall-bladder pathology and a month's medical treatment was advised. This patient had been diagnosed as maligancy of the gall-bladder several months before and it must be stated that he surely looked the part.

On October 7, 1929, he was again admitted with his condition unchanged. Under local operation a distended gall-bladder and stone in common duct were found. Post-operatively he had a severe uremia but by November 28, 1929, he was able to be discharged. Since then he has rapidly recovered, he travels from New York to Florida on business and is in splendid condition.

If this paper has renewed any interest in this subject, it will have served its purpose. May we look forward to the day when Browning's philosophy will become a fact:

"Grow old along with me—
The best is yet to be."

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## RECENT DEVELOPMENTS IN PROSTATIC SURGERY.*

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The advancement of prostatic surgery to its present high state of efficiency and safety marks one of the most notable of the many achievements that have signalized the development of the field of urology within the past quarter of a century.

When one pictures a debilitated old man, toxic from renal insufficiency, unstable from cardiac imbalance, and cursed with an incessant urge to rid himself of urine he cannot completely expel, he recognizes a patient pathetically in need of aid and yet singularly unable to withstand the shock of any violent therapeutic remedy.

To take this tottering figure, who, of course, represents an extreme, but yet common, degree of disability fortunately not expressed by every victim of prostatic disease, and carry him securely through the stress of a drastic surgical procedure, sending him eventually forth with a new and happy lease upon his dwindling life, is indeed an event of major significance,—seemingly an impossible task. It is precisely this, however, that urology has accomplished to an extent that, barring a certain inescapable mortality, has brought the promise of comfort and renewed health to thousands of otherwise hopeless and utterly wretched individuals.

* * *

The steps by which this achievement was ultimately realized are of the utmost importance. Recognition of obstruction to urinary outflow as the vital factor in the problem and of the prostate gland as the source of that obstruction came promptly. The issue seemed clearly defined. If, by one means or another, the gland were removed there would be no obstruction and the patients would become well. The gland was, therefore, forthwith removed in many instances but the patients did not get well. Most of them died. It now became painfully obvious that other factors of deep significance had to be weighed. Many bitter lessons were learned but from them eventually was written one of the most brilliant pages in surgical history.

Upon that page the act of prostatectomy was reduced to its proper and relatively minor place in a program that embraced the patient as a whole. Sharply defined and of outstanding consequence in that program was a scrupulous regard primarily for overtaxed hearts and especially for distressed kidneys. When these could be readjusted the prostate itself could be considered but not until then. The actual surgical procedure became now but one of a series of incidents in a general process, first of rehabilitation and then of maintenance upon the newly established level until finally the patient could shift safely for himself. In other words, pre-operative preparation and post-operative support assumed a position of commanding importance, and to them is due in every respect the real credit for the results finally attained in this department of surgery.

It is necessary to keep this fundamental fact constantly in mind, not only in reference to the historical backgrounds of prostatectomy but also in reference to the newer developments to which attention will be directed later. The effects of prostatism are acutely local but essentially remote, and the surgical approach has to be made accordingly. Such a patient may enter the hospital with any degree of disorder from slight vesical distress and small residual urine to intolerable agony and total retention. The patient's immediate concern is to be rid of his symptoms; the surgeon's ultimate concern is to be rid of the hypertrophied prostate gland which is producing the symptoms by strangulation of the vesical outlet. The first will be temporarily accomplished by some form of artificial drainage; the latter by any procedure that may be elected, provided it is efficient—open operation, punch, electrocoagulation, or the intra-urethral resection which constitutes the chief subject of this paper. Between these two stages lies the danger zone where the surgeon will tread but lightly and always, if he is wise, accompanied by a skilful internist. In this zone the essence of the task will be realized. A careful study of all the vital processes of this old man will be made. Kidneys which have gradually adapted themselves in some degree at least to the back-pressure of retained urine will not be shocked into total dysfunction by sudden withdrawal of that pressure; on the contrary, cautious un-

*Read at the annual meeting of the Ex-Internes' Association of Stuart Circle Hospital. March 23, 1932.

loading of the bladder will be recognized as a primary requisite. The heart, embarrassed by renal insufficiency, will be built up if possible by rest, diet, regulated exercise, and drugs. Coincidently the digestive functions, so often disturbed by the toxic load, will begin to improve. Above all things the wear and tear of urinary distress will cease and the patient will enjoy again the blessedness of unbroken sleep and relaxation. In the meantime the surgeon will be adopting such measures as may seem necessary in the face of the urinary infection commonly also present; and by cystoscopic, urographic or other means of his election will be disclosing any additional pathology in the form of renal or vesical calculi, diverticula, tumors, etc. Regular blood-pressure records, charts of the urinary output, blood counts, estimations of the blood chemistry, fractional studies of the dye output will be added to the all-important general clinical behavior of the patient in completing a picture which finally—perhaps after weeks or months—informs the surgeon either that he dare not undertake operation at all or else that the patient has slowly but steadily mounted to a new level from which direct attack upon the prostate may now be reasonably undertaken.

Assuming that the latter is the case, and it is usually so, the question of the best method of attack then becomes the consideration of the moment. With certain significant reservations that will be noted later it has been until now generally conceded that prostatectomy or total removal of the hypertrophic mass was a clear-cut indication. Urologic surgeons have been almost solidly united upon this point and have differed only in reference to the avenue of approach to the gland. One group, led by Hugh Young, have steadfastly held to the perineal route; another, comprising probably a majority of the profession, have preferred a suprapubic attack. Both groups have with unanimity recognized the operation itself as secondary in importance to the preparation therefor, and both have consistently adopted the principle of careful and prolonged preliminary drainage. Whether this drainage was effected by means of indwelling catheter or suprapubic cystostomy was a detail left to the preference of the individual operator. Both groups succeeded from the common ground of preliminary treatment and diligent post-operative care in reducing mortality and morbidity to a low level and the figures offered by either so nearly approximated those of the other that the choice between the two was a toss-up usually decided by the habit of the particular operator into whose hands the patient happened to fall.

There seemed nothing left, therefore, than a perpetuation of the argument between the two camps with both so solidly entrenched that there was absolutely no hope of the dislodgment of either. Now and again some refinement of technique was debated, such as suture of the vesical neck after prostatectomy or primary closure of the bladder without drainage. But in the main the prostatic problem seemed solved with nothing else of consequence to be said beyond the annual barrage as between the advocates of the perineal route on the one side and those of the suprapubic route on the other.

* * *

Now with dramatic suddenness the picture has changed. The contention between the two groups described above becomes a matter of no further interest in the presence of a force, not new and yet revolutionary, which puts both of them sharply upon the defensive. This force is represented by an intra-urethral attack upon the prostate, substituting a minor for a major surgical procedure, and having for its object the removal of only the obstructing portions of the gland and the restitution of normal function with little or no danger and with greatly abbreviated hospitalization.

The principle is actually one of the oldest in the annals of modern urology. As early as 1844 Mercier devised and used a prostatic incisor which, however, was complicated by considerable hemorrhage. Thirty years later Bottini, in an effort to reduce this danger of hemorrhage, added a cautery feature which was not entirely successful. In 1900 Freudenberg, of Berlin, contributed to these instruments certain cystoscopic features of great value. In this country Fuller and Chetwood followed with the employment of the galvano-cautery for the relief of prostatic obstruction. In 1910 Beer, of New York, used the high frequency current (Oudin) for the destruction of benign vesical tumors and raised the question of its possible value in an attack upon the prostatic median bar. A short time later Stevens acted on Beer's suggestion and carried it a step further by employing the d'Arsonval cur-

rent of deep penetration and attempting its use upon lateral lobes as well. In 1914 Luys, of Paris, developed the so-called forage of the prostate, tunneling the gland with the galvanocautery. Shortly before this time Young presented his ingenious punch for the obstructive median bar without any reference to true prostatic hypertrophy. Since then various instruments have appeared from time to time, including the Caulk cautery punch, the Collings electrotome, the Braasch-Bumpass punch, the Day punch, and the highly efficient Kirwin punch.

As a result of these efforts certain possibilities began to define themselves. It became quite evident that the obstructive median bar could be specifically handled with either the electrotome (Collings) or the improved punches, especially those giving perfect vision and preliminary coagulation of tissue to prevent hemorrhage. So effective are these instruments that over-enthusiasm has developed and many unnecessary "punches" are being made into bars of inflammatory origin that would yield to simpler measures, as observed by this writer and pointed out emphatically by Von Lackum, of the Mayo Clinic, and others.

The application of electro-coagulation with the penetrating high frequency current to the reduction or destruction of obstructing prostatic masses has not met wide acceptance, and yet its possibilities are very considerable, if cases are properly selected and if the modality is employed with judgment and without timidity. Here and abroad a few urologists have followed the lead of Stevens and found it of distinct usefulness. The writer is among this number. In a small but interesting series of cases extending through several years I have effectively relieved localized prostatic enlargements by this means alone.

Finally, the punches, originally designed for the median bar only, were turned by some venturesome urologists toward the much more difficult lateral lobes also. Striking and sometimes unexpected success met some of this effort, especially when the lobes were small or of modest size. The present day refined punch is an instrument of great ingenuity and in the hands of the writer has been of great service in various instances.

We have withheld a report of these cases in order to develop a series of respectable proportions and to observe late results. As it now begins to appear that the resectoscope may supplant the punch, it is possible that this report may never come to light. It is appropriate, therefore, to state at this time that our experience fully confirms the claims made for the punch by others; that we have been led to more and more frequent use of it in frank prostatic hypertrophy of the lesser grades; and furthermore that our experience coincides in several cases with that of Engel and others —namely, that the obstructing element is usually the median lobe, a satisfactory attack upon which will not uncommonly be followed by complete relief, though definitely enlarged lateral lobes be left untouched.

* * *

When all was said and done, however, and when a reluctant recognition was won for a conservative attack of this sort on the lesser degrees of prostatic enlargement in selected cases, there remained untouched and apparently untouchable, except by radical surgery, the gross mass, sometimes as large as a fist or larger, which, by general consent, could be assailed by no such puny methods.

A lone voice in the wilderness disputed this contention. John Caulk, of St. Louis, a surgeon of great skill, yet began deliberately to abandon radical surgery on the prostate and to preach the doctrine that if a sufficient amount of tissue was removed with a punch from lobes, however large, the obstruction would be relieved by this procedure plus the shrinkage that would occur in the remainder of the gland as a result of the drainage and relief of congestion thereby effected. This assertion which, with rare courage, Caulk repeatedly thrust before the profession, was received with respect but with skepticism sufficient to deny it any large following. Finally, while his colleagues were quietly awaiting Caulk's realization in late results of the error of his way, the St. Louis urologist came forward with the bold and astonishing announcement that in 85 per cent of all cases he was finding his method thoroughly efficient. Today this pioneer witnesses a complete vindication of his judgment in the spectacle of a movement in his direction that is approaching the dimensions of a stampede.

The latest evolution of prostatic surgery to which we now come in chronological progression does not bear the name of Caulk but it

is founded squarely upon the doctrine he has so ardently and consistently preached. To Davis, of South Carolina, and McCarthy, of New York, will go the credit of giving it the finishing touch. Adopting the principle of the loop electrode, proposed in 1926 by Maximilian Stern, of New York, and later discarded because of imperfections in the instrument which carried it, these two men have brought about what must, whether willingly or not, be recognized as a revolution. McCarthy is a urologist of note whose work has been quiet and unobtrusive but significant; probably it would eventually have won considerable, but not general, acceptance. Davis was unknown to the profession; his work has been spectacular, and the manner in which he has stormed the country, meeting ridicule with overwhelming rejoinder and ultimately, by force of tireless energy and abounding faith, winning not only respect but admiration, will remain an epic chapter in the history of urology. With the great fortresses of urologic surgery arrayed against him he stands, nevertheless, a victor upon the field and has accomplished nothing less than something resembling a rout of forces that seemed impregnable. There should be no stinted recognition of what this South Carolinian has done. Whether or not one relishes the thought of the wane of prostatectomy he should gratefully and unequivocally extend to Davis the great and lasting credit that is his just due.

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The minute technical details of this operation of intra-urethral prostatic resection will be of greater interest to the practical urologist than to this audience. Only enough will be said of it here to give some comprehension of its meaning and scope. The procedure of Davis is built around the direct vision resectoscope of Maximilian Stern which Davis has improved to the point of making it a thoroughly workable and dependable instrument. His electrical unit is likewise an adaptation of one (Bovie) in previous existence. It is evident that Davis possesses a great deal of native mechanical ability. From time to time he has altered his working tools to suit his wishes and has only recently brought them to their present state of efficiency. McCarthy, on the other hand, operates through the widely-known for-oblique pan-endoscope which bears his own name and in the development of an electrical unit called upon the genius of the Wappler house; the latter discarded all precedents, attacked the problem from a fundamentally new angle, and has now produced a cutting-coagulating current with distinctive characteristics.

In the hands of both the radio-loop of Stern, enlarged, strengthened, and accurately controlled by a rack and pinion mechanism is the actual operating element. The instrument is passed to the bladder and the prostatic urethra, distorted by hypertrophic masses, is brought under full inspection. The electrode is then swung into the field and the loop allowed to rest against the tissue to be removed. The current is now switched on with the foot and the loop immediately becomes a vital cutting blade. With the rack and pinion it is made to travel through the tissue against which it lies and the instantaneous result is a gutter-like excavation for the extent of its excursion. Coagulation, either simultaneously or by another switch of current while the loop is returned in the reverse direction, controls bleeding. The bit of tissue is removed by withdrawal of the working parts, the latter are replaced, and the process is repeated many times until the protruding gland has been whittled away. Finally, the urethra is seen to be thoroughly "revised" and once more becomes a widely-open passage for the outlet of urine. The amount of tissue that may be thus removed is impressive when the scraps are assembled at the completion of the operation. The extra-urethral portion of the gland, often a large mass, remains undisturbed for the time being but subsequently undergoes marked shrinkage. The clinical results are almost immediately evident. A retention catheter is left in the bladder for two to four days. Upon its removal the patients are usually able to void freely. Minor complications may cause delays but as a rule patients are out of the hospital within a week.

Untoward post-operative events may occur, as with any surgical procedure, but generally speaking they are of small consequence. If hemorrhage is properly controlled at the time —and this is an imperative obligation of the operator—it will rarely occur subsequently and will then be amenable to further electro-coagulation through the urethra. Infection and sepsis are possible but the sealing of tissues by the electric current reduces this eventuality to a minimum. Epididymitis will be prevented

here, as in prostatectomy, by preliminary ligation or resection of the vasa deferentia. The dangers of cardiac and renal collapse will be lessened by the smaller tax upon the patient of this minor procedure and will be further guarded against by careful preliminary preparation. Upon this latter point additional emphasis is necessary. Resection of the prostate, though technically complicated, is a much simpler surgical procedure than prostatectomy and will, therefore, in all likelihood be applicable to cases in which radical operation is impossible. But it must be distinctly and unfailingly understood that they aim at the same result—the emptying of a bladder previously unable to discharge its normal function in this direction. The two procedures differ, but the outcome is the same; so is the patient. No less is he the dilapidated old man pictured at the outset of this review, and if he is approached without due circumspection he can be killed with a radio-loop as well as with a scalpel. Here, as in formal prostatectomy, preliminary preparation, though it may perhaps be considerably shortened, occupies a position of paramount importance. It will be easy to overlook this essential fact and to sally forth casually with this new instrument. If so, disaster will with certainty follow and the lesson taught by previous sad experience in relation to prostatectomy will, in relation to prostatic resection, be learned again at the expense of many lives.

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It is too early yet to attempt any precision in a consideration of indications, limitations and final results. Whether intra-urethral resection will be applicable in nearly 100 per cent of cases, as claimed by Davis, or in 30 or 40 per cent of cases, as predicted by some others, only time will tell. The same is true of results. For the time being they appear to be remarkably good. If recurrence develops, the same relatively simple operation may be repeated, and even at that will not entail the stress of prostatectomy. Furthermore, prostatectomy itself is not without its recurrences, contractures, overlooked nodules, and tags of tissue requiring secondary procedures. The matter of more remote recurrence is not of great moment to an old man who does not expect to live long enough to encounter it. Other factors will also enter into the estimation of results. The procedure is described as simple but this latter word must be interpreted in the light of masterly experience and dexterity in intra-urethral manipulation. Inadequately trained cystoscopists will contribute a chapter of poor results and some fatalities. Many glands that need no operation at all will be attacked, especially by a few heedless non-operating urologists who now picture an opportunity to enter a field from which they were previously excluded. On the other hand, some accomplished urologic surgeons will use the resectoscope for a time, possibly in some instances with resentment, and will quit it with disrespect because it is time-consuming, troublesome, and taxing upon the patience of the surgical mind. Finally, it must be realized that the apparatus itself is not perfect. Further improvements are certain to be made and with them will come improved results.

Out of this maze of skepticism, which is gradually being broken down; of over-indulgence, which is threatening to become of large dimensions; and of thoughtful, conservative, constructive work, which is now quietly but effectively being done in certain quarters, will eventually come a true measure of the situation. The issue will eventually lie, as it should, in the hands of the highly trained and open-minded urologists of the country. They will be slower to speak but more impressive. When this authoritative voice is finally heard, I believe it will establish intra-urethral resection as the procedure of choice in a large majority of prostatic enlargements, displacing the punch and reserving the present standardized operation of prostatectomy for exceptional cases, especially the very large and very vascular glands. Such a prediction is, in a sense, itself an exhibition of excessive enthusiasm since it is made in advance of the demonstration of personal results over a reasonable period. It is given, however, in response to a request for the expression of an opinion at this time and it will be modified as often and as extensively as may be dictated by future events.

## MYOCARDOSIS.*

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Within the past several years the use of the term myocardosis has gradually increased. The cardiovascular diseases, probably more than any other branch of medicine, have re-

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ceived an unusually large number of new terms, most of them expressions of more recently discovered facts. New instruments, new procedures, new methods of examination, have all contributed to this advance. Concise and exact terminology is important to each of us in our continual studying, and the reason or reasons for the conception of any new term should be weighed thoroughly before accepting an addition to an ever increasing vocabulary.

The term myocardosis was coined by Dr. David Riesman to cover those cases of chronic myocardial failure in which the signs of inflammation were lacking. The important role played by the aging process of man and the normal physiologic breakdown in the cardiovascular structures during the middle and advanced age period has been shown by workers such as Cohn, Herrick and Cabot, to vie in seriousness with the distinctly inflammatory diseases of the heart. There is a distinct contrast between the degenerative changes present in individuals reaching middle life, and the true diseases of the heart and blood vessels. In other words, the differentiation of the wearing out process and the alterations due to disease has become a special problem for the clinicians of today.

The loosely used term "chronic myocarditis" has been applied to all of these various types of cases. Many objections have been raised against the fact that the term myocarditis includes such a multitude of conditions. It does not stand for accurate diagnosis.

It does not convey to us any exact clinical or pathological picture either in conversation, on a hospital record, or on a death certificate. Myocarditis as a clinical diagnosis has wrongly included many other conditions in which degenerative changes, fibrosis, and atrophy have occurred without actual inflammatory process. In the attempt to diagnose heart disease more accurately the term myocarditis is being widely abandoned in large part. There is a distinct need for a word expressive of the real underlying pathologic changes in the big broad class of degenerative myocardial weakening, as distinguished from inflammatory heart disease. The term myocardosis would seem to cover the ground particularly from a clinical viewpoint.

Let us think of myocardosis as including those cases of chronic myocardial disease which lack any inflammatory signs or symptoms. The term will bring clinical and pathological thought closer together. The diagnoses myofibrosis and myosclerosis, and other terms of pathological nature are merely attempts at closer correlation between clinical and purely post-mortem findings. It is not possible, however, to diagnose these purely pathological conditions except in the pathological laboratory, although we should have, and have in the term myocardosis, a means of designating that we feel the condition to be degenerative in character.

From a pathological viewpoint the term should be ably supported. Quoting from Delafield and Prudden, "It is believed by most modern observers that the new connective tissue which develops in the heart in connection with atrophy of the muscle fibres, as a result of impaired nutrition due to a narrowing of the lumen of the coronary arteries or to other causes, is not, in the stricter sense, inflammatory in its nature but is rather a fibrous hyperplasia, the new-formed connective tissue forming secondarily to replace the muscle fibres which have atrophied. Nevertheless, we still for convenience call the lesion myocarditis, thus implying inflammation." It is because of the indefiniteness of the term myocarditis that this subject is an important one.

In the office or hospital or at the bedside we cannot hope to make an exact pathological diagnosis of either the inflammatory or the purely degenerative type of cardiovascular disease. As a matter of fact, in the degenerative type of myocardial change it is possible that no microscopic lesions will be made out, or that only small portions of the heart will show definite pathologic changes. With it clearly established in our minds by means of proper terminology whether the changes are, or are not, the result of inflammatory processes, it should be possible to form a mental picture of the possible pathologic condition of the heart which would help greatly in reaching a diagnostic conclusion. This clearly formed in each cardiovascular case stands for better transfer of ideas as well as a more definite basis for diagnosis and treatment.

Various investigators have conceived certain terms to express this thought. Christian, for example, speaks of non-valvular heart disease. Riesman conceived the term myocardosis and has given it able support. Hyman and Parsonnet, of New York, have elaborated on it. There is clearly a need for some such term.

There is no exact analogy between this term in its relation to myocarditis, and the Epstein term nephrosis in its relation to nephritis. The term nephrosis was first introduced by Von Müller to designate histologic changes in the kidneys which manifested themselves in a primary degenerative process of the tubular epithelium. This is in contradistinction to the inflammatory changes in the interstitial tissues and glomeruli known as nephritis.

One great factor in the causation of degenerative changes is the actual starvation of the myocardium. Other factors include age, amount of physical exertion, etc. Impoverishment of any muscle will detract from its efficiency. Many of us are using hypertonic glucose solutions intravenously in a variety of conditions and we are familiar with the excellent results obtained. In the case of an impoverished myocardium the use of glucose is based on a long series of experiments. These show that there is a consumption of dextrose in the circulating fluid of the artificially perfused human heart and in the mammalian heart, that the presence of an increased amount of glucose in the perfusion fluid is very favorable for the work of the heart, and that the excitatory action of adrenalin is prolonged by it. Other experiments show that the addition of insulin to the perfusion fluid accelerated the removal of dextrose from it in the isolated mammalian heart, and that this extra sugar does not disappear by combustion. Still other experiments show that the volume of the heart is reduced by adding glucose alone as well as insulin alone, and by either action its efficiency is increased. From these conclusions the effect of glucose on the myocardium can be stated in a general way to increase the mechanical capability of the muscle. It is important to note that neither insulin nor sugar has any action on hearts already working efficiently.

Starvation of the myocardium manifests itself in pellagra, indirectly causing the cardiovascular symptoms associated with this disease. Heart muscle starvation is also part of the picture in the severe anaemias or any of the wasting diseases.

A majority of the cases of chronic myocardial disease are degenerative in character. The commonest causes of myocardial degeneration are the chronic vascular diseases, namely, general arteriosclerosis, sclerosis of the coronaries and aorta, syphilitic endarteritis and chronic hypertension. Opinions differ as to the relative importance of these several conditions. Generally speaking, they keep the myocardium from obtaining its proper nourishment and a destruction occurs with formation of new fibrous tissue and scars. Hypertension causes hypertrophy of one or both ventricles with extensive dilatation. The continued excess resistance against which the heart must work impairs its nutrition and interferes with the removal of the waste products of its activity, which leads to degeneration.

Advanced myocardial degenerative disease produces definitely the common symptoms of heart failure, or myocardial insufficiency. The outstanding manifestation is the circulatory deficiency and stasis, which, in turn, is directly responsible for most of the symptoms, such as dyspnea on exertion, exhaustion, edema, cough, and impairment of digestion. Except for pain and palpitation the symptoms are not usually referred directly to the heart. The symptoms that are referred directly to the heart are due to myocardial exhaustion.

The diagnosis of these advanced stages of myocardosis are rendered more simple because of certain diagnostic instruments of precision as well as through the more careful cardiovascular history and examination due these patients. These advanced cases are easily recognized by the average physician. They have proper diagnosis and up-to-date therapy established, with a happy prolongation of the case in some instances. They, furthermore, are usually in some definite category of late degenerative cardiovascular disease and, consequently, have the name of that particular condition applied to them and not the indefinite term myocarditis. Late myocardosis, as distinguished from early myocardosis, describes these cases excellently. It is not for them particularly that the term myocardosis was coined.

On the other hand, there are a large number of patients with earlier manifestations of degenerative myocardial change, who must be included in the myocardosis syndrome. Early myocardosis seems to describe very adequately these early cases of myocardial weakening or degeneration. These are the patients who present undisputed symptoms of myocardial impairment in life, but who after death exhibit hearts which are apparently normal macro-

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scopically and microscopically. In these patients there has been some degenerative change during life-time, causing cardiovascular symptoms, which change cannot be found after death by any of the modern pathological methods of demonstration. This category includes those patients who suddenly drop dead from angina pectoris without previous warning, as well as those who give a long history of cardiovascular disease. Some of these are the patients in whom physical examination does not elicit any sign of disease of degeneration. Even after a searching cardiovascular survey, including laboratory, electrocardiographic and X-ray procedures, we must report such a patient as being normal. One of these patients may sooner or later suffer a severe cardiovascular breakdown, and without regard for his physician as a prognostician, pass quickly out of the picture.

Since thorough examination renders no assistance in the diagnosis of many of these cases, the question resolves itself into a proper valuation of the earliest manifestations of cardiovascular damage. Most important among the early symptoms are the three symptoms described by Kaufmann, of Vienna, known as Kaufmann's triad. He describes these three cardinal symptoms as not only leading in frequency but also as being the earliest to appear in a patient's history. By using care in eliciting all the facts in a history these symptoms can be traced back for many years in some cases. The three symptoms are dyspnea, palpitation and substernal discomfort. These are familiar and important symptoms to all of us, particularly in late stages of heart disease. But as early symptoms they are even more important.

The recent beginning of dyspnea after exertion will be evaded by the average patient, but persistent questioning on the part of the examiner can determine the importance of this factor. There is no standardization test for dyspnea, because comparison of sedentary and non-sedentary individuals in this respect cannot be made by any one test. An estimate of this factor can be gained by analyzing response to habitual types of effort of any specific individual, such as walking up a certain hill, the carrying of loads, or the performance of usual daily duties. As a general rule, dyspnea should be considered as an important feature of myocardosis, and should be stressed as definite evidence of cardiac impairment unless some other outstanding cause is revealed.

Palpitation is usually described as varying from a mere awareness of the heart's activity to a painful pounding in the precordium. This second symptom of Kaufmann's triad is clearly a subjective one. The patient must have the ability to describe it properly and completely. It must be distinguished from the heart consciousness of emotional origin and from misinterpretation of gastrointestinal symptoms. Palpitation occurring in any patient should demand a complete cardiac survey, and particularly should not be treated lightly in those individuals of the middle age group.

The third symptom mentioned, substernal distress, is usually the one which sends the patient to his physician. The average individual will put up with many abnormal sensations, but when pain or distress manifests itself, medical attention is sought. The degree of distress present may only be a feeling of compression or tightness. This distress or pain is invariably localized in the midsternal area rather than in the precordium. If the other symptoms of the triad are not evident to the patient the substernal distress is rarely associated with heart trouble. The heart is known to be on the left side and a mid-line symptom cannot be associated in the patient's mind with the heart. The symptom never develops from pure mental strain, or gastrointestinal irritability, as does the pain of coronary thrombosis. A diagnostic point of the substernal distress of myocardosis is that it is invariably associated with muscular effort.

I have stated that these symptoms are early ones. An important point is that they are frequently present in the otherwise normal patient. There is no inflammatory change. The change is an early degenerative one and hence the term myocardosis, or early myocardosis, if you choose, seems to fit this picture from both the clinical and pathological standpoint. It is through finding and treating these early cases that we can increase our age of expectancy and lower the mounting incidence of heart mortality. The term myocardosis should bring clearly before us the non-inflammatory picture, the result of degenerative changes of various sorts.

In the early manifestations of myocardosis

I have stated that little or no pathological evidence is found at biopsy and frequently no positive findings on physical examination are demonstrated, although certain cardiovascular symptoms have definitely appeared. In the later manifestations of myocardosis our clinical interpretation is usually confirmed by diagnostic aids, to help us form a mental picture of cardiovascular degenerative changes. In either early or late myocardosis our mental picture from both a clinical and pathological standpoint is clearer than if the term chronic myocarditis had been used.


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## ACUTE APPENDICITIS IN CHILDREN.*

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This paper is an attempt to point out peculiarities in the diagnosis of acute appendicitis in infants and children. It is only by early recognition of this common condition that the present high mortality and morbidity rates can be lowered.

In a study of the diagsosis of this pediatric problem, a few notes on the development and anatomy of the appendix may be helpful.

From the standpoint of comparative anatomy, the appendix vermiformis is an undeveloped cecum. In infants and children the abdomen is normally large in proportion to the whole body and appears more so because of the small size of the pelvis and thorax. The abdomen contains not only the organs found in the adult, but also the bladder and upper end of the rectum. At birth the liver is proportionately very large, being about one-eighth of the whole body weight as compared to one-thirty-sixth in the adult. The size of the abdomen in infants and children is due to this large liver and to the presence of the bladder and rectum which have not sufficient room in the small pelvis. The colon occupies somewhat the same position that it does in the adult. During infancy the cecum may not have rotated and taken its position to the right side of the abdomen. The sigmoid with its long mesentery, instead of occupying its usual adult position in the left hypogastrium may lie transversely in the suprapubic region or over to the right near the cecum, or it may hang down in the pelvis and give rise to a variety of partial fecal impactions. Except for the subcutaneous fat, the abdominal walls are very thin. The omentum in infants and young children is small in size, filmy in consistency, and does not give the usual protection against irritation and inflammation found in adults. The umbilicus is placed relatively low. In the newborn it is approximately at the central point of the whole figure. During the sixth and seventh weeks of intra-uterine life, an elongation of the cecum takes place. This pouch remains undifferentiated and of the same caliber until the fifth month when its oral portion dilates to form the cecum and its distal portion remains rudimentary as the appendix. At birth the appendix has completed its development and is relatively longer than in the adult, while the cecum continues to grow so that the disproportion in size between the cecum and appendix constantly increases through childhood. Absence of the appendix is extremely rare except as a result of disease or operation. At birth the appendix arises from the apex of the cecum, which is roughly conical with the three longitudinal muscle bands diverging from the appendix at equal distances from each other. This infantile type of appendix and cecum may persist in about 2 per cent. of cases. Usually a development of the cecal wall takes place between the anterior and external longitudinal bands, forming a new apex to the cecum and displacing the base of the appendix to the left nearer the ileocecal valve, a type which is present in about 90 per cent. (Richardson). The location of the appendix depends on that of the cecum. If the cecum is in its usual position, the base of the appendix is most often located on its medial side, slightly below the ileocecal valve.

The walls of the appendix, especially the submucous layer, are more delicate in the young. In many children the mesoappendix is short, leaving that portion of the appendix which extends beyond it deficient in blood supply. The position of the cecum in the

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embryo is to the left of the midline near the level of the umbilicus, from which position it develops, rotates, moves to the right and then descends. A part of this relative change of position is due to the ascent of the umbilicus. In most infants and children, the situation of the cecum and appendix varies considerably from that found in the adult. It is often higher and farther toward the midline, or even projecting beyond it. In unusual instances the cecum and appendix are in an inguinal or scrotal hernia, or under the liver, or near the spleen or left kidney. In still rarer instances, there is complete transposition of the abdominal viscera. This usually persists throughout life.

The usual predisposing causes include age, sex, race, season, geographical distribution, diet, prevailing diseases, anatomical positions, and family susceptibility. Appendicitis is a disease of young adult life, the greatest incidence occurring before the age of twenty. It is rare in infancy, becomes increasingly frequent throughout childhood, reaches its maximum in early adult life, and then diminishes slowly with advancing years. No age, however, is immune. Instances of prenatal appendicitis have been reported, and at the other extreme it may occur in the ninth decade. Even in infancy appendicitis is not so infrequent that it can be overlooked. Richardson, of Boston, states that it is the commonest abdominal emergency in children over one year of age.

Males are more frequently affected than females, with a ratio of two to one. This fact is supposed to be accounted for by the better circulation in the female through the appendiculo-ovarian ligament. Possibly the greater activity of males and more opportunities for trauma may account for the frequency of the disease in this sex.

Seasonal variation is noted, most cases occurring in the spring and early autumn, next in the summer, and least in the winter months. There seems a tendency for the incidence of appendicitis to increase in epidemics of colds and influenza.

A tendency for acute appendicitis to attack members of the same family has been repeatedly observed.

The role that diet plays in appendicitis is still debated. Statistics seem to show that individuals receiving the simpler, cheaper form of diet are not so susceptible. This point is again emphasized by the fact that appendicitis in the original African negroes is extremely rare, whereas those negroes who are living in civilized communities seem to be equally as susceptible as the whites.

The determining causes of appendicitis in the order of their importance are: bacterial invasion, infectious diseases, fecal concretions, intestinal parasites, foreign bodies, and trauma. Most frequent of all bacteria concerned in lesions of the appendix is the common colon bacillus. Fecal concretions, intestinal parasites, foreign bodies, trauma, variations of the appendix such as kinks, twists, disturbed circulation and abnormal contact with other diseased structures—all tend to make the appendix more receptive for bacterial invasion.

Usually, in older children, the diagnosis of acute appendicitis can be made as readily as in adults. Two of the principal difficulties, however, are first: in children, the constitutional reaction may be so marked as to overshadow the abdominal symptoms, particularly if the appendix is misplaced; and second, frequently an acute febrile condition originating outside of the abdomen is associated with abdominal pain. The usual signs and symptoms occur in the following order: 1. Abdominal pain, 2. nausea and vomiting, 3. tenderness, 4. rigidity, 5. fever and increased pulse rate, and 6. leukocytosis.

1. The characteristic abdominal pain starts in the epigrastric or umbilical regions, occasionally in the lower abdomen, or is "colicky" over the entire abdomen. Pain precedes all other sypmtoms. In three to twenty-hour hours after onset, the pain moves downward and to the right, localizing with greatest intensity in the right lower quadrant. If pain begins in the right lower quadrant, it is usually not appendicitis. Sudden cessation and abatement of symptoms should not be trusted as true improvement, for this often indicates perforation.

2. Nausea and vomiting, or both, follow pain immediately, or one to two hours later. Constipation is usual, though diarrhea occasionally occurs, especially just before the attack, and more often in children than in adults. If nausea and vomiting precede pain, appendicitis may be ruled out and one should think of such conditions as scarlet fever, measles, meningitis, etc.

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3. In 1889, Charles McBurney, a New York surgeon, described the famous "McBurney point" as follows: "I believe that in every case the seat of greatest pain determined by the pressure of one finger has been very exactly between one and one-half inches and two inches from the anterior spinous process of the ilium on a straight line drawn from that process to the umbilicus." This diagnostic sign has been of the greatest value in differentiating appendicitis from other acute abdominal conditions. No other sign in appendiciitis has supplanted this. The point of maximum tenderness in infants and children corresponding to McBurney's point in adults is in the middle third of a line drawn from the anterior superior spine of the ilium to the umbilicus. It must be remembered, however, that the point of maximum tenderness varies with the location of the appendix. Tenderness with rigidity cannot be localized over McBurney's point in more than 50 per cent. of cases of appendicitis in infants and children.

4. Rigidity of the whole right side of the abdomen, chiefly in the lower quadrant, is the rule. If the appendix is misplaced, the muscle spasm may be elsewhere. The finding of rigidity is very helpful, though its absence does not rule out appendicitis; it is difficult to determine in a crying or struggling child. Both tenderness and rigidity may be greatly diminished or altered by the administration of opiates or other sedatives, or by the prolonged application of ice.

5. Fever is present, though in slight degree as compared to the fever found in pyelitis, pneumonia, and the exanthemata. The pulse rate is usually increased out of proportion to the fever.

6. Leukocytosis of medium degree is strong evidence, but is not solely to be depended upon. The total white blood count alone may be very misleading. A differential count showing an increase in the percentage of polymorphonuclear cells is more important than the count of the total number of white cells. Recent work with Schilling's differential count, as has been brought out by W. Ambrose McGee, is of the greatest value in early diagnosis.

*Inspection* of the abdomen frequently reveals restricted respiration in the abdomen, especially on the right. The breathing is more costal than abdominal. The flexed right thigh, whether the child is standing or prone, may be observed. Occasionally a limp on the right side is noted.

*Palpation* is the most important part of the examination and by it is determined the degree of tenderness and rigidity, and the presence of any mass. Always begin palpating gently with a warm hand on the side away from the suspected lesion, working toward the epigastrium and across to the right lower quadrant. Watch the patient's facial expression during the examination. Repeated and careful palpation is essential in most cases. Cutaneous hyperesthesia, or hyperalgesia, is helpful in adults, but of no value in infants and uncooperative children.

*Percussion* may be useful in determining dullness in any area and outlining a mass due to indurated omentum, an appendiceal abscess, etc. Light percussion is more accurate. Too much reliance, however, cannot be placed on percussion alone.

*Auscultation* is of little value in appendicitis. Paralytic ileus associated with peritonitis may be suspected if active peristalsis is not exhibited.

*Roentgen ray examination* with an opaque meal or an opaque enema should never be done on any patient suspected of having acute or sub-acute appendicitis. The presence of barium in the intestinal tract and the necessary trauma of manipulation in fluoroscopic examination will increase the inflammation, and sometimes may even rupture an acutely inflamed appendix. It is only in a small percentage of cases of appendicitis that roentgenologic examination is of any positive value.

*Vaginal examination* is rarely justified in children.

*Rectal examination* should *always* be done in infants and children. Care should be used to avoid pain in inserting the finger. Gentle pressure of a well-lubricated, gloved, or "finger cotted" finger maintained for several seconds on the anterior portion of the sphincter ani muscle will relax it. The finger reaches much further anatomically in the rectum of an infant or child than in an adult. By this means a tumor may be felt, and abscess sometimes recognized, or tenderness localized, which could not be accomplished by palpation through the abdominal walls. Occasionally abdominal and rectal examinations should be done under a light anesthesia. In all these examinations extreme caution and gentleness

are necessary to guard against breaking up any adhesions and spreading infection.

*"Signs" of appendicitis.* In the literature there are sixteen or more "signs" of appendicitis that are supposedly diagnostic. Aaron's sign is a feeling of pain or distress in the epigastrium, umbilical region, or left hypochondrium, produced by continuous firm pressure with the tips of the first three fingers over McBurney's point. This sign is fairly constant. Blumberg's sign is helpful in determining active peritonitis. Sharp pains are elicited by sudden removal of the hand from the abdomen after pressure has been made. After subsidence of the inflammation, the pressure pain exceeds that made by the sudden relief. Brittain, an intern in Memorial Hospital, Richmond, Va., first observed in July, 1928, the sign that goes by his name. LaRoque feels that this sign is pathognomonic of gangrenous appendicitis in the male. He states that palpation of the right lower quadrant of the abdomen in the presence of gangrenous appendicitis invariably produces sudden retraction of the right testicle which drops to its original position as soon as pressure is withdrawn. This sign has been helpful in my experience, though it has not been pathognomonic and particularly not constant in young children. Meltzer's sign is the production of definite tenderness when pressure is made over McBurney's point, while the right leg is extended, with the patient lying flat on the back, arms elevated, and left knee partly flexed. The extended right leg is kept rigid and gradually elevated, thus impinging the appendix between the abdominal wall and the body of the psoas muscle.

*Laboratory examinations:* A total and differential leukocyte count should be obtained in every case of suspected acute appendicitis; however, the value of a single observation, particularly if the total white count is about normal, may lead to a false interpretation. When it is possible to perform a Schilling's differential count, this should by all means be done. Too much stress cannot be placed upon the accuracy and experience of the individual making this test. Examination of the urine should be done, although there are no characteristic changes in appendicitis. By urinalysis, complicating factors such as diabetes, nephritis, pyelitis, etc., may be determined. The finding of blood or pus in the sediment does not necessarily suggest a urinary cause for the pain, as the presence of an inflamed appendix close to the pelvis of the kidney, ureter, or bladder may result in both pus cells and red blood cells in the urine. This is particularly true of a well-advanced inflammation of the appendix in infants and children.

*Differential diagnosis:* Before a group of pediatricians, it would be presumptuous of me to try to discuss the differential diagnosis of acute appendicitis. Some of the commoner diseases and conditions that may be confused with appendicitis are: the exanthemata, particularly measles, basal right-sided pneumonia, pyelitis, acute mesenteric lymphadenitis, ileocolitis, intussusception, foreign bodies, angioneurotic edema, allergic conditions, herpes zoster, abdominal pain following vaccination, suppurative disease of the right hip or spine, and numerous other maladies.

The *treatment* of acute appendicitis in pediatric practice should be immediate operation. Conservative measures in the presence of a definite diagnosis are not justified. It is generally safer to operate on the grounds of a reasonably probable appendicitis rather than wait until inflammation has spread sufficiently to establish a clear diagnosis. Infants and children are more readily overwhelmed by peritonitis than adults. A careful choice of the type of anesthesia must be made; rapid and gentle surgery performed; drainage employed in doubtful cases; and immediate measures taken to combat dehydration and acidosis. Thorough cooperation between the pediatrician and suregon must be maintained not only in the diagnosis and pre-operative period, but also in the post-operative course. The services of the pediatrician are particularly helpful in watching for pulmonary complications, and in directing the diet and general care.

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*St. Elizabeth's Hospital.*

## WORK OF THE VIRGINIA HEALTH DEPARTMENT FOR CHILD HEALTH AND PROTECTION.*

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Only a few years ago the sole activity of the average Health Department was communicable disease control with the entire emphasis on quarantine, vaccination, pure water and food, and the proper disposal of human waste. Medical schools were devoting virtually all their instruction to curative medicine, and the average physician was surprised if a patient consulted him for other than an apparent illness.

It took the World War to change the attitude of both preventive and curative medicine. When approximately one-third of our drafted men were rejected on account of physical disability, a large percentage of which could have been prevented in infancy and childhood, public health officials began to awaken to the fact that the laity needed more health education; medical schools included Preventive Medicine in their curricula; and practicing physicians began to realize they had something more to do than to cure their patients after they became ill.

The education of the laity is not a new idea to the Virginia State Department of Health; for one of the first things our beloved Dr. Ennion G. Williams did when he was appointed Health Commissioner in 1908, was to compile and publish a series of Health bulletins. From then on until the time of his last illness, one of the major methods he employed for Health Education was the health literature published not only in bulletins but in daily and weekly papers, in journals and in magazines.

The health program of the State Health Department continues to be one of education. The main objectives of the Child Health Bureau of the Virginia Health Department are:

1. That every expectant mother may see a physician for health supervision as soon as she suspects her pregnancy, and at least once after delivery.

2. That every child shall be under the care and supervision of a physician from the date of his birth.

3. That the laity be made to realize the importance of health supervision for themselves and their families and become willing to pay for advice for the prevention of disease rather than for a prescription or medicine.

4. That every one of the 2,300 practicing physicians in the State be made to realize his responsibility for health supervision as well as for curative measures.

5. That every child in the State have the advantage of a full-time health worker whose duty is to promote and correlate the above objectives.

We make use of several methods to put over this educational program. One of these is Midwife Education. Our Director of Midwife Education teaches a course of eight lessons, stressing the fundamentals of cleanliness, the danger of digital examination, the first symptoms of danger before, during, and after labor, the proper handling of emergency cases, and the importance of having the prospective mother see a physician at least once before and once after delivery. She also urges that the midwife give a copy of the bulletin on *Prenatal Care* to each expectant mother as soon as she is engaged.

When this work was first started in 1921, there were 9,500 midwives in the State. Of these our Director said: "It would be hard to describe the women who attended my first classes held in the section known as the Black Belt. They were almost without exception ignorant, superstititious and dirty. Most of them had been "called by the Lord" to do this work, and they "must have been doing it right because in a vision He had shown the way."

*Read before the Health and Medical Service Committee of the Governor's Conference on Childhood and Youth, held in Richmond, November 24, 1931.

In my own private practice I frequently saw the tragic results from placing lives in the hands of this type of midwife. The second patient I lost after I began the practice of medicine was that of a woman in labor with a cross presentation. The baby's hand had been in sight for four days, but the midwife had delayed sending for a physician as she thought it would be a reflection upon her knowledge and ability. This was the attitude of the average midwife in Virginia twenty-five years ago.

The number of midwives has now been reduced to 4,478. Of these 3,415 have had the entire course of eight lessons, and they now consider it a disgrace when a physician is not called promptly at the first sign of danger. Last year the attendance upon eighty-six midwife classes was 5,336. There are, however, approximately 1,000 midwives who have not been reached. These women, as a rule, are so scattered that it is impossible to assemble them in groups for the special course of midwife instruction.

In order to reach them, we are endeavoring to include them in the groups of women in various communities who are studying our Correspondence Course for Mothers. This group is taught by a teacher, a physician, or a lay leader, and all lesson papers from the class are sent for correction to our Director of the Correspondence Course for Mothers. The Midwife Instructor, or the local Public Health Nurse, meets with the class as often as practical, to give demonstrations that are of especial benefit to the midwives.

This method of group work serves a double purpose: The midwife is taught how to render better service to her patients, and the women of the community are taught what to demand of the midwife. During the last fiscal year, 637 of these study groups were organized with an enrollment of 4,293.

The Correspondence Course for Mothers has recently been revised and now consists of eight lessons on general health education: 1. Why Health Education; 2. Nutrition; 3. Health Habits; 4. Disease Prevention; 5. Prenatal Care; 6. Infant Care; 7. Child Care; and 8. Mental Care. These eight lessons teach mothers and other homemakers how to protect their own health and the health of their families. Especial effort is made to teach mothers how to have their children physically fit to enter school.

This course is taught entirely by correspondence, the women studying either individually or in groups. There is now an average enrollment of 3,000, and an average of about fifty complete the course each week.

During the last fiscal year, our county nurses taught 839 lessons in the Red Cross Course, *Home Hygiene and Care of the Sick*, with an attendance of the classes of 10,613.

A special nurse has been employed for the past eight months, to teach a series of ten or twelve lessons on *Home Nursing and Prevention of Disease*, to groups in counties that have no Public Health nurse. During the last eighteen weeks the attendance has averaged over 500 women a week. This service is given at a cost of approximately fifteen cents per lesson, or eight cents per hour of instruction.

During the current year the Staff of the Child Health Bureau have given to adult groups 852 single addresses on some phase of Child Health.

In 1920 the Legislature passed what is known as the "West Law" which requires every teacher to take a special course in Health education; and places the responsibility for the health of the school children jointly on the State Board of Education and the State Board of Health.

Since that time the two Departments have worked together most harmoniously, and have developed a plan of health education in the schools that is highly approved by most of the workers who visit us from other states and countries.

Our teachers are required to make a careful annual physical inspection of every school child, to detect obvious defects in vision, hearing, teeth, throat, and weight. Virtually all of them have now been taught to make this inspection and their inspections as a whole are remarkably near to being accurate. The parents are urged to consult their family physician about any defects found, and every effort is made to help them to have corrections made. The chief complaint that parents make is that teachers are over-solicitous and children are sometimes urged to consult their family physician unnecessarily—a fault which you educators will agree with me is on the right side of the ledger.

Last year there were 28,482 children in Vir-

ginia who repeated their grade and many others who dropped out of school while in the elementary grades. It will be readily understood why so many children fail when we learn that only 29 per cent of the white children in the State are now Five Point children—that is, their vision, hearing, throat, teeth, and weight meet a definite minimum standard, or have received specified medical attention

According to figures compiled by the State Board of Education for several years, the counties with nurses and health officers have many more Five Pointers than the counties that have none. In the counties with nurses or health officers, in 1930-31, of the 114,549 white children inspected, 40 per cent were Five Pointers; and the counties with no nurse or health officers had only 17 per cent Five Pointers among the 129,221 inspected.

Statistics also show that 84 per cent of our school children in counties with a nurse or health officer have been vaccinated for smallpox, while only 47 per cent have been vaccinated in counties without either. And 38 per cent of the children have been immunized against diphtheria in the first group of counties, while only 18 per cent have been immunized in the group without such helpers.

In 1927 a committee from the Medical Society of Virginia, from the State Pediatric Society and from the Division Superintendents of Schools met to formulate a plan for ultimately making every child first entering school a Five Pointer. During the past summer under this plan 4,903 children entering school for the first time were each examined in a physician's office as a private pay patient, with parents present. This is over three times as many as were examined the year before.

No curative clinics are conducted by this Department except Dental Clinics which were requested by the Dental Society of Virginia, and these clinics have resulted in a large increase of patients for the dentists. However, where curative clinics, such as orthopedic or eye clinics, are sponsored by the local Medical Society, the nurse assists when invited. Our Department does conduct in the out-lying counties T. B. diagnostic clinics, with an X-ray machine to assist the local physicians in making a diagnosis of indigent children who have been in close contact with active cases of tuberculosis. But even the X-ray examination is made only on request of the family physician.

For many years vaccination and immunization clinics have been held at irregular intervals in various sections of the State, but we are now trying to develop a plan to transfer even this responsibility to the family physicians.

There are 37 counties in Virginia that have no full-time health workers, but do have many organizations that can be induced to do some form of health work. They are looking to us to guide them in their programs. We therefore have a Field Nurse who devotes her entire time to this organization work. She helps them to organize their health committees, she assists them in making out programs for public meetings and study classes; she guides them in selecting their health projects, and shows them in detail how to develop these activities.

From the above brief outline you can see that our whole aim is to educate the laity to the value of health protection and supervision, and to place the responsibility for community health, so far as the child is concerned, upon the parents and the family physicians. Much has been done in this direction, but still it seems that the surface has barely been scratched, for even now the average person seldom consults his family physician for health supervision, and rebels at the payment of a medical fee unless a prescription or medicine is given.

We hear complaint of high taxes. Let's see if this is entirely justifiable. Is there a person in rural Virginia who would not prefer to have his gasoline tax doubled rather than to be relieved of all gasoline tax, and even have his gasoline given him, if he would have to ride over the roads of 25 years ago? Or is there a person in Virginia who would agree to be relieved of all taxes, if he and his family had to be subjected to the diseases and the death rate that prevailed in Virginia before the State Board of Health was reorganized in 1908, even if he had all of the comforts and protection, except health, that his taxes give him?

But what has been accomplished in the last few years to promote health is only a beginning. Half the diseases and deaths that now occur in people under 60 are preventable. Our great need is health education, and still more health education!

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## COMPLETE OUTWARD DISLOCATION OF THE PATELLA.*

W. BANKS HUFF, A. B., B. S., M. D., Roanoke, Va.

Dislocations of the patella are of rare occurrence. Winslow, quoting Stimson, says: "Dislocations of the patella form less than 1 per cent of all dislocations; and the infrequency with which they have come under the observation of individual surgeons and the incompleteness or the obscurity of the reports of many cases have combined to make the systematic descriptions rather artificial and unsatisfactory."

Outward displacement is the most frequent form of patella dislocation. The degree of the dislocation varies. The dislocation is classed as incomplete or complete, according as there is a direct outward dislocation onto the ridge of the external condyle, or beyond this ridge.

The most frequent causes of outward dislocations of the patella are:

1. Direct violence upon the inner side of the patella.
2. Sudden muscle action, especially if knock-knee be present or the external condyle be poorly developed.

In addition, Kleinberg mentions other factors that commonly predispose to an outward dislocation:

1. Laxity of the quadriceps muscle; and
2. Contracture of the ilio-tibial band and the external lateral patellar expansion of the quadriceps aponeurosis.

The capsule is torn toward the inner side of the patella, or there may be a tearing away from the patella of the vastus internus.

It is stated that the patella may be dislocated when the knee is in either hyper-extension or flexion. The following case of outward dislocation of the patella, in which the knee was in hyper-extension is sufficiently interesting to justify its report:

### Report of Case

E. J. B., a white male, aged 45 years, a farmer, was admitted to the hospital October 29, 1931, complaining of pain and inability to move his right knee. He stated that while repairing the roof of a small building near his home the roof suddenly caved in, causing him to fall on to the floor, a distance of about fifteen feet. He fell in such a way as to injure his right knee, forcing it inward.

*Family History* was unimportant.

He gave a history of having had a pyogenic infection of his right knee four years previously. This was incised and drained. No stiffness of the joint resulted.

*Physical Examination* was essentially negative except for the injury to the right knee. The leg was held stiff and immobile for fear of exciting pain. On inspection of the knee anteriorly the joint appeared much flattened and wider than normal. The flattening was especially noticeable between the condyles of the femur. On palpation the patella could be easily outlined, but out of its normal position. The anterior surface was palpable and looked forward, the inner border resting on the external condyle of the femur. The outer border appeared somewhat more anterior than the inner. The patella was fixed firmly outside the anterior femoral articular surface. It was very definite that one was dealing with a complete outward dislocation of the patella, which, in the absence of trauma, was undoubtedly due to muscular violence.

The X-ray examination by Dr. C. H. Peterson was in accordance with the physical findings, showing the patella dislocated laterally and impacted against the margin of the external condyle of the right femur. There was no

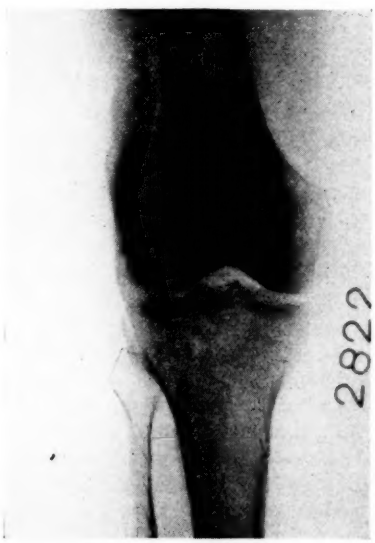


Fig. 1.—Antero-posterior view of right knee.

*From the Department of Surgery, Shenandoah Hospital, Roanoke, Va.
Read before The Roanoke Academy of Medicine, December 7, 1931.

evidence of bone injury to the patella or lower end of the femur—see Figs. 1 and 2.

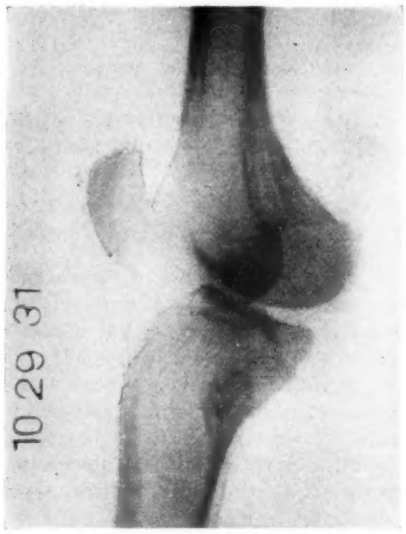


Fig. 2.—Lateral view of right knee.

*Treatment.*—Attempts to reduce the dislocation without an anesthetic were unsuccessful. Under nitrous-oxide anesthesia the right hip was flexed on the abdomen, with hyper-extension of the knee. The patella was then slipped back in its normal position with ease. A plaster splint was applied posteriorly from ankle to hip, and a pressure bandage applied about the knee. This support was kept on for three weeks. After daily massage for one week the patient had perfect use of his knee.

### Conclusions

This case been been presented because:

1. The injury is of rare occurrence.
2. The knee was in hyper-extension—flexion or semi-flexion being more common.
3. There were no pre-existing anatomical or pathologic conditions of the knee that could have been contributing factors in the dislocation.

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## GRANULOCYTOPENIA DUE TO STREPTOCOCCUS VIRIDANS—REPORT OF A CASE.*

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and
ROGER L. CREEKMUR, M. D.,
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Reports of cases of infection with a diminution or even a disappearance of the polynuclears from the blood stream have appeared in the literature from time to time since the first one by Brown.[1] Interest was first aroused by the publication of a number of cases by Schultz.[2]

A few of those cases in which microbic infection appeared to be the exciting cause of the granulocytopenia may be mentioned. Friedemann[3] isolated Ps. pyocyanea from the blood stream in one case. Dasse[4] found the same organism in the throat in almost pure culture. Jacobsen[5] reported a case of agranulocytosis in which the streptococcus hemolyticus was recovered in pure culture from the lesions in the rhinopharynx. A very interesting case is reported by Railliet and Ginsbourg,[6] who isolated the meningococcus from their case. Roberts and Kracke[7] report the finding of streptococcus hemolyticus in the blood stream in their case. References to additional cases may be found in the reports mentioned above.

From the lesions of the pharynx, in the case herein reported, the streptococcus viridans was present in almost pure culture, and it was present in the blood stream in pure culture.

### Report of the Case

Patient, white male, aged 82, under observation for a period of eight years, was admitted to the hospital for rectal operation.

Family history of no importance.

Past history: Patient had enjoyed particularly good health throughout most of his life. Complained of frequent sore throat and head colds. He was chronically constipated, and complained for years of protruding hemorrhoids. About six years ago, patient complained of severe pain over the pericardium. A diagnosis of angina pectoris was made. No similar attack had recurred.

About three weeks before admission to the hospital, patient had an attack of grippe (?),

*From the Department of Bacteriology and Clinical Pathology, Medical College of Virginia, and Retreat for the Sick, respectively.

with marked congestion of the throat, lasting one week.

One week before admission, rectal examination revealed a large polyp. Removal of this polyp was advised and he was admitted to the hospital. He was prepared for the operation the following day, but this was postponed because examination of the blood showed a leucocyte count of 1,600, hemoglobin 75 per cent, erythrocytes 2,840,000. A second specimen showed the leucocytes to be 1,400, small lymphocytes 75 per cent, polymorphonuclears 25 per cent. Examination of the urine was negative except for a few granular casts. Patient made no complaint at this time of a sore throat, but a mild injection of the pharynx was present.

On the second day following admission (March 15th) patient complained of slight sore throat. The anterior cervical glands were palpable and tender, and there were numerous large grayish ulcerative patches on the pharynx. The leucocyte count was 2,000, with lymphocytes 48 per cent, and polymorphonuclears 52 per cent.

On March 16th the throat was worse, and the soft palate was ragged and dirty gray. There were several necrotic lesions on the anterior portion of the right pillar, marked gingivitis and one of the anterior cervical glands was the size of a walnut. The breath was very fetid. Temperature 102° F., pulse 90, respiration 38. The leucocyte count was 1,600; lymphocytes 40 per cent, polymorphonuclears 60 per cent.

March 17th and 18th, condition about the same. Leucocyte count 2,000.

March 19th, liver palpable; stomatitis more marked, with marked sloughing.

Patient had been given oral asepsis with irrigations, topical applications, liver extract, X-ray of the long bones, and one injection of neoarsphenamine.

March 20th, leucocytes 2,200, lymphocytes 50 per cent, polymorphonuclears 50 per cent, erythrocytes 3,640,000. The throat condition had become progressively worse, the skin icteroid. The patient was in a semicomatose condition; rales throughout the chest with tubular breathing. Temperature 103.6° F., pulse 110. Leucocyte count just before death was 800.

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## THE OLD FAMILY PHYSICIAN, SLOWLY BUT SURELY, COMING BACK INTO HIS OWN.*

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"The mills of the Gods grind slowly, but surely."

During the last meeting of the American Medical Association in Philadelphia, according to the registration of the various sections, we find about three times as many general practitioners or family physicians registered in the Section on the General Practice of Medicine than all of the others, including all of the specialists in attendance, both those from foreign countries and in the United States.

Does not this indicate that the general practitioner, the old family physician, is fast coming back, as in the *days of Old?*

It was the happy privilege of the writer many years ago to listen to the distinguished and much beloved Dr. Nicholas Senn in his Presidential Address before a large assemblage of well-known Southern physicians of the American Medical Association in the city of Atlanta, Ga., when he made the significant statement that major surgical operation should *never* be undertaken by any first-class surgeon without first consulting the family physician of the patient, who should give all the information pertaining to the etiology and pathology of each case under consideration. In other words, withhold the surgeon's knife until the family physician passes his judgment on the advisability of a major surgical operation. The modern tendency of sending a patient to the operating room prior to making a thorough diagnosis is becoming too common of late years; hence the alarming death rate from surgery and the severe criticisms of our modern surgeons, as well as the greater dread of hospitals by those who are in actual need of hospital treatment.

I know whereof I write, having only recently lost my only son, Dr. Wm. S. K., who was operated on for gall-stone about one year ago, but owing to certain complications the surgeon

*Read by title before the sixty-second annual meeting of the Medical Society of Virginia, at Roanoke, October 6-8, 1931.

failed to remove the gall-bladder, and decided to postpone a second operation for another date; hence this last operation, although seemingly simple enough, that of removing the gall-bladder alone, cost the patient's life, notwithstanding the fact that this patient was for ten weeks under the watchful eye of this distinguished surgeon and two trained nurses, besides the daily attendance of three of the leading surgeons of Washington and Baltimore. Then, I may add, the patient was in a fine state of health, so far as known, he having served two years in the World War as assistant surgeon in Mobile Hospital No. 39 with the Yale Unit. If you will pardon the digression, I would by far have preferred my son's passing away on the field of battle in an honorable fight for his country than in a hospital where the ubiquitous streptococcus is permitted to invade the sacred field of operation or in the nearby precincts whereby the deadly germ of peritonitis may thus cause the untimely death of one of the finest young Christian soldiers that was ever born.

It has been the writer's privilege to witness and take an active part in a great many major surgical operations, both in this country and in Europe, besides having undergone a very serious major operation for the removal of gall-stones in the skilful hands of our well-known, Dr. W. J. Mayo, of the Mayo Clinic. I had carried two large gall-stones for over ten years, thinking I might possibly escape the surgeon's knife by careful dieting and exercising prudence, but in this I made a complete failure, and had finally to submit to the knife. My quick recovery without the slightest complication convinces me that the most important thing to do is, first, to select a first-class surgeon, who is sufficiently skilled from a surgical standpoint to prevent complications, one who is thoroughly conversant with the best mode of sterilization and prevention of any form of germ infection, especially that much noted and fatal germ family, the streptococcus, and its half-brother, the staphylococcus. These two families of germ infection are capable of producing profound blood poisoning or septicemia following various surgical operations, when the surgeon is indifferent or ignorant of the significance of these deadly foes of humanity.

I am pleased to state that I have not suffered one single hour from the operation or otherwise since leaving the hospital over eleven years ago. And I must give Dr. Wm. J. Mayo and the Mayo Clinic all the credit for my complete recovery. Would that many other places could boast of two such wonderful surgeons and splendid men, whose kindliness of heart toward their fellow physicians is as commendable as their superior skill as surgeons. Once upon a time we could boast of our lamented, Drs. Hunter McGuire and George Ben. Johnston, who were among our leading surgeons, but, like many others of their high type of surgeons, have passed over the river to rest under the shade of the trees. Oh! that we could call back to Mother Earth a few of such men as Nicholas Senn, John Wyeth, Hunter McGuire, Arpad Gerster, Samuel Gross, etc., whose names are written high-up on the roll of honor, and should have a place in the Hall of Fame.

If you will pardon the seeming digression, I shall devote a few minutes to the subject of why so many failures in our profession in this twentieth century! May we not offer a few common sense suggestions along this line? Having been doing general practice in my humble way for nearly half a century, I feel that a few timely suggestions from one who has been in the harness this long might meet your approval. As physicians, we all need a little more business tact in our dealings with the laity from a financial standpoint. Can we not discover a plan by which to collect on delivery for our professional services as other business citizens do? Of course, we should use tact from a humane standpoint. If we cannot do a C. O. D. business, better offer a thirty day indulgence, allowing 20 per cent discount additional for cash. This plan appeals to the writer, who has tried it for a number of years with much success and general satisfaction. Besides it saves the worry of a losing game with collecting agencies and lawyer's suits. After about forty years experience, I have found that it does not pay to warrant for your pay; better give to the worthy poor than to receive. As the late Prof. Cathell states in his book, The Physician Himself, "Better not treat the devil's poor lest you can command cash on delivery."

Let us cherish the memory of our forefathers in medicine, including the old family doctor, who never presented a medical bill, but received more in honorariums than twice

the actual cash, in addition to the saving of postage and duns, besides keeping the good graces of the family, friends, relatives, etc. It was a very rare occurrence that the old-time doctor was ever dismissed or supplanted by another physician, notwithstanding the home-made pills and unpalatable solutions, castor-oil, etc., that were prescribed with the assurance that the medicines were always taken with good results. It was the writer's privilege to successfully pass as many as half a dozen of the leading Medical Examining Boards in the United States, including the mixed Boards, where he noted the antagonism existing in the various boards. I became acquainted sufficiently to be able to impart any information pertaining to the standing of each board if questioned. It was also the privilege of the writer to do post-graduate work at many of the best post-graduate schools in the United States as well as in the best schools in Europe, including those in the University of Berlin, Heidelberg, and Leipzig. He has had the honor of being one of the delegates from the United States to the First Congress on Professional Medicine held in Paris in 1900 where he read a paper before this congress entitled "The Attitude of the Medical Profession of the United States Toward Proprietary Medicines"; he was also appointed delegate by the American Medical Association to the Thirteenth International Medical Congress held in Paris in the year 1900. During my stay in Paris, I took advantage of an opportunity to attend the best hospitals in Paris and the various European post-graduate schools. These courses in Europe were preceded, however, by courses every few years in the fine post-graduate schools of the United States, such as the New York Polyclinic, New York Post-Graduate, Mayo Clinic, University of Minnesota, Johns Hopkins, etc. Since my vast experience in post-graduate study and that of passing the various Medical Examining Boards, I feel amply prepared to give information pertaining to either one of these important subjects.

In concluding this rambling paper, the writer would like to ask the question in connection with his previous inquiry—as to why there are so many failures in the profession in this twentieth century, why so many sudden and untimely deaths in our profession in this twentieth century? I may offer the suggestion, first, that the automobile and aeroplane, and the common habit of taking the so-called proprietary headache remedies, such as the coal-tar products and habit-forming drugs, including alcoholic beverages in connection with the automobile accidents, etc., are the prime causes of more sudden deaths from heart disease in the medical profession than any other of the many causes. The writer is strongly of the opinion that many of the above mentioned causes are productive of incurable or life-time nervous diseases, such as epilesy, delusional insanity, psychasthenia, hysteria minor and major, etc.

The writer wishes to apologize for the references to himself, also to his much beloved son, whose young and useful life, in my opinion, was sacri iced on the alter of unscientific surgery at the hands of one of our most distinguished surgeons, whose mind became beclouded by his strong friendship for his patient. Unknowingly, he thus permitted the ubiquitous streptococcus to invade the sacred field of operation, causing septic peritonitis and the untimely end of one of the finest characters and Christian soldiers that was ever born.

STREPTOCOCCUS PYOGENES

The stealthy germ that infects human beings, the surgeon's greatest enemy.
Malicious microscopic little mite, safely hid from view, you park,
And never wage in open fight, but stab your victim in the dark.
The bolder bugs, before they sting, at least burst forth in song,
But you do not; besides you bring your gang along, your gang along!
You lie in wait in stagnant pools, or lurk about hospital floors;
An equal foeman I could love, but you I must despise!
Because you take advantage of your *tiny, little insignificant size!*

—*B. C. K.*

*Apt.* 2, 1438 *Columbia Road.*

# Miscellaneous

## Psychiatric and Mental Hygiene Clinics.

The Directory of Psychiatric and Mental Hygiene Clinic, especially for children in the United States, compiled and edited by the Division on Community Clinics of the National Committee for Mental Hygiene, is a most interesting and informative publication. It has just been issued and shows the steady growth that

is being made in mental hygiene activities by the Federal and State governments and various agencies and institutions throughout the country. There are at this time such clinics in practically every State, the number of such psychiatric and mental hygiene clinics being about five hundred.

### State Activities in Virginia

Under the supervision of the State Department of Public Welfare, Arthur W. James, Commissioner, State Office Building, are the follow institutions:

*Hospitals for Mental Diseases*

Central State Hospital (for colored patients), Petersburg. Hugh Carter Henry, M. D., Superintendent.

Eastern State Hospital, Williamsburg. George W. Brown, M. D., Superintendent.

Western State Hospital, Staunton. Joseph S. DeJarnette, M. D., Superintendent.

Southwestern State Hospital, Marion. George A. Wright, M. D., Superintendent.

*Institutions for Feebleminded and Epileptic*

Colony for the Colored Feebleminded, Petersburg. Hugh Carter Henry, M. D., Superintendent.

State Colony for Feebleminded and Epileptic, Colony. John H. Bell, M. D., Superintendent.

The total number of patients actually in all foregoing institutions at this time is about 10,000.

A department for the care of the white criminal insane, established in 1909, and one department also for ex-service neuropsychiatric patients, known as the Davis Clinic, have been developed at the Southwestern State Hospital. Similar departments for the colored criminal insane, established in 1909, and for ex-service neuropsychiatric patients are operated at the Central State Hospital.

### State Bureau of Mental Hygiene

The Bureau of Mental Hygiene, William F. Drewry, M. D., director and psychiatrist, State Office Building, under the State Department of Public Welfare, was established in 1929. The Bureau cooperates with the State hospitals for mental diseases in fostering demonstration clinics at the meetings of State and county or district medical societies. The work of the Bureau includes giving lectures, addresses, radio talks, reading papers, publication of articles, especially in the Virginia Medical Monthly, and the distribution of literature.

The State Mental Hygiene Clinic, under the direction of the Bureau of Mental Hygiene, was established in September, 1928, and its service is available to the entire State. A total of 625 cases were studied during the year ending June 30, 1931. Of this number 545 were committed to the Department of Public Welfare by the Juvenile Courts of the State, and eighty were referred by local agencies. All referrals except the Juvenile Court cases were approved by physicians. Consultation service is available for both children and adults.

### Community Clinics

*Charlottesville*

Neuropsychiatric and Child Guidance Clinic, Medical Building, University of Virginia.

Director: David C. Wilson, M. D.

Opened in September, 1929. Authority: University of Virginia, Department of Medicine. New cases examined during past year: children twenty-five; adults fifty-six.

*Richmond*

Children's Memorial Clinic, 1001 East Clay Street.

Director: Harvie DeJ. Coghill, M. D.

Opened in November, 1924. Authority: Board of Directors of the Children's Memorial Clinic, Inc. New cases examined during the past year: children 976.

*Clinic on Nervous and Mental Diseases:*

Out-Patient Department, Medical College of Virginia, 1100 East Clay Street.

Director: Beverley R. Tucker, M. D.

There are several neuro-psychiatrists connected with this department.

Opened in 1908. Authority: Medical College of Virginia.

William F. Drewry, M. D.

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Laughter is the saving emotion of the human race, when genuine, for from its presence the cynic flees, the pessimist retreats, the misanthrope is driven to cover. Under its influence the sun shines in dark places, the birds bring again their choicest songs, the flowers lift their smiling faces, and the world becomes once more a worthwhile place in which to live.—*Charles E. Whelan.*

XUM

# Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
PRESIDENT-ELECT—*Mrs. W. P. McDowell*, Larchmont, Norfolk.
SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
TREASURER—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

## The Woman's Auxiliary to the Richmond Academy of Medicine

Sponsored a most attractive garden bridge party at the lovely home of Dr. and Mrs. J. Allison Hodges on Cary Street Road, Richmond, on May the 20th. Mrs. Austin I. Dodson and Mrs. J. B. Dalton were co-chairmen, with the following sub-chairmen: Mrs. O. C. Brunk, candy; Mrs. Harry Hinchman, chairs and tables; Mrs. Charles Llewellyn, telephone; Mrs. T. S. Shelton, tickets; and Mrs. Thomas N. Ennett, prizes. Practically all members of the Auxiliary took an active part in this benefit entertainment. There were one hundred and twenty-five tables.

The money raised will be applied on the fund for furnishing the lounge in the new Academy of Medicine Library building, now nearing completion. As the offices of the Medical Society of Virginia are to be housed in this building, it is expected that other auxiliaries throughout the State will cooperate in this movement also.

## The National Meeting.

The Woman's Auxiliary to the American Medical Association met in New Orleans, La., May 9th to 14th. It was a most successful meeting from every standpoint. The President, Mrs. Arthur B. McGlothlan, presided. There were present twenty-six National Board members, sixty-three delegates, eighteen alternates, and 808 members and guests, making a total of 918 registered. There were seven members from Virginia. Twenty-eight states were represented.

The Woman's Auxiliary was the only source of distribution of *Hygeia* that showed any increase over last year, this increase being 50 per cent.

The report of the nominating committee was given. The following were declared elected unanimously:

President-Elect, Mrs. James Blake, Hopkins, Minn.; vice-presidents, Mrs. James F. Percy, Los Angeles, Calif.; Mrs. Wm. R. Brooksher, Jr., Ft. Smith, Ark.; Mrs. Arthur C. Christie, Washington, D. C.; Mrs. Rolls Packard, Chicago, Ill.; recording secretary, Mrs. Sherman S. Hesselgrave, St. Paul, Minn; and treasurer, Mrs. R. W. Tomlinson, Wilmington, Del.

Directors for two years: Mrs. J. Ralston Wells, Daytona Beach, Fla.; Mrs. Joseph Pettit, Portland, Ore.; and Mrs. Joseph Hume, New Orleans, La. By virtue of her office, Mrs. Arthur B. McGlothlan, St. Joseph, Mo., is ex-officio director for one year.

The gavel and President's pin were presented to the new President, Mrs. Walter Jackson Freeman, of Philadelphia. The new officers were introduced by the President. After her inaugural address, Mrs. Freeman announced the appointment of her committee Chairmen as having been approved at the post-committee board meeting:

Program—Mrs. Arthur B. McGlothlan, Missouri.

Public Relations—Mrs. A. Haines Lippincott, New Jersey.

Hygeia—Mrs. Rogers N. Herbert, Tennessee.

Revisions—Mrs. S. A. Collom, Texas.

Press and Publicity—Mrs. Milton P. Overholser, Missouri.

Printing—Mrs. J. Newton Hunsberger, Pennsylvania.

Archives—Mrs. William B. Odenatt, Pennsylvania.

Historian—Mrs. Allen H. Bunce, Georgia.

A rising vote of thanks was extended to the Chairman of the Convention Committee and to all of those whose charming and gracious hospitality was expressed in every possible way on every occasion.

The A. M. A. will meet in Milwaukee, Wis., in 1933.

GERTRUDE M. BURGES HARRIS,
(MRS. WM. L. HARRIS),
*Delegate from Virginia.*

## Novelty Work by Auxiliaries.

"It's hard nowaday to find a novelty in Auxiliary work, but the New Orleans Auxiliary certainly carried off one palm," according to Mrs. Walter Jackson Freeman, in the April *A. M. A. Bulletin*. "To meet the desperate need for medicines in the Clinics and in the Welfare work of the City, between October 15th and February 1st, the Auxiliary collected 10,906 physicians'

samples! What a charity, not only to the needy poor, but to the physicians wives, thus happily relieved of the disposition of thousands of lotions and potions, plasters and salves. They are collected every two months and sent to the Children's Welfare and other organizations, who in turn give to the Clinics the medicines they themselves are unable to use. I recommend this idea, particularly to the city auxiliaries, where it seems entirely feasible. The aid of the Junior League might be invoked, or a motor corps of our own juniors formed. The Washington Auxiliary already has a motor corps who might be interested. Three days a week they take the welfare workers from the hospitals on their round of duty. On two days a week they carry groups of children to the hospitals for physiotherapy. The District Auxiliary also reports having 'placed *Hygeia* in one hundred homes.' "

"Another novelty, peculiar to El Paso, Texas, is the eradication of pollen-bearing weeds to forestall hay fever. No effort is too great to eliminate this curse, apparently ever more prevalent, and I particularly urge every Auxiliary to consider the possibility of hiring unemployed to clean up vacant lots and plant them with vegetables. At small initial expense hay fever victims would be relieved, work would be provided for the needy, and whole families would be assured of their Summer vitamins. It seems worth trying."

### Other Notes From the Same Source

"Judging by reports in the State journals, interest in *Hygeia* is steadily increasing. Delaware, Georgia, Missouri, West Virginia and Florida all give it special mention. Florida, and in fact the Southern Auxiliaries in general, are working on medical history and biography. Student loan funds are another universally favorite and much needed activity. Scholarships in medical schools are comparatively few, and the course is too exacting to leave time for self-support. Here again the Auxiliary can fill an otherwise empty niche in the medical world.

"North Carolina, South Carolina and Alabama are busily preparing for their annual meetings this Spring. North Carolina reports two new Counties in progress of organization. Colorado, whose editorial, 'Take this Journal Home to Your Wife,' bids fair to become a slogan, has two new Auxiliaries, some of whose members think nothing of driving sixty-five miles through snowdrifts to attend a meeting. The Georgia Auxiliary is cooperating with the medical association, the state dental society, the state health department and many other organizations in holding regional health conferences at strategic points. Auxiliary members appear on the program with other speakers. Such conferences cannot fail to impress even the most ignorant layman with the value of organized effort to stamp out diseases, such as typhoid, malaria and diphtheria, all prevalent and all preventable."

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In the March Bulletin letter of Mrs. Freeman is a paragraph containing a message Mrs. Freeman would like conveyed to all Auxiliary women. You will agree with its timely reasonableness:

"Records lead me to another thought in regard to Auxiliary reports in State Medical Journals. May I offer a suggestion? It's entirely proper to publish the names of new officers and committee chairmen, but it's distinctly disappointing to read only that Mrs. John Jones reported for the Public Health Committee and Mrs. Samuel Smith for Public Relations, and to find all the rest of the valuable space—that costs the Medical Society good hard cash—devoted to social trivialities. Can't we safely assume that Mrs. Thomas Townsend was a gracious hostess, that the ribbons matched the flowers, that there was no salt in the ice cream, and that piano, violin and voice were in tune? The State Journals are so generous in the space they give the Auxiliaries that I do feel that we ought to report the work planned and actually accomplished by Mrs. Jones and Mrs. Smith and their committees instead of stressing food, decorations and musical programs. Reports of committee work are bound to be full of helpful suggestions for other Auxiliaries, and in the last analysis we are organized for a serious purpose and are interested in each other's progress toward the goal."

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# Truth About Medicine

In addition to the articles enumerated in our letter of March 26th, the following have been accepted:

Chappel Bros., Inc.
- Chappel Liver Extract (Oral).
- Chappel Liver Extract (Subcutaneous).
- Ampoules Chappel Liver Extract (Subcutaneous), 2.5 c.c.

Gilliland Laboratories, Inc.
- Diphtheria Schick Test Toxin, Diluted Ready for Administration—Gilliland.
- Diphtheria Toxoid—Gilliland.

Hoffmann-La Roche, Inc.
- Digalen Injectable—Roche.

Lederle Laboratories, Inc.
- Banana Allergenic Extract—Lederle, Beef Allergenic Extract—Lederle, Chicken Meat Allergenic Extract—Lederle, Codfish Allergenic Extract—Lederle, Corn Meal Allergenic Extract—Lederle, Crabmeat Allergenic Extract—Lederle, Green Pea Allergenic Extract—Lederle, Horse Serum Allergenic Extract—Lederle, Lamb Allergenic Extract—Lederle, Lima Bean Allergenic Extract

—Lederle, Milk Allergenic Extract—Lederle, Orange Allergenic Extract—Lederle, Pork Allergenic Extract—Lederle, Pyrethrum Allergenic Extract—Lederle, Rice Allergenic Extract—Lederle, Rye Allergenic Extract—Lederle, Spinach Allergenic Extract—Lederle, Tobacco Allergenic Extract—Lederle, Wheat Allergenic Extract—Lederle, White Potato Allergenic Extract—Lederle, Chocolate Allergenic Extract—Lederle, Sheep Dander Allergenic Extract— Lederle, Horse Dander Allergenic Extract—Lederle, Orris Allergenic Extract—Lederle, Cow Dander Allergenic Extract—Lederle, Flaxseed Allergenic Extract—Lederle, Cottonseed Allergenic Extract—Lederle, Feathers Allergenic Extract—Lederle, Goat Dander Allergenic Extract—Lederle, Buckwheat Allergenic Extract—Lederle, Almond Allergenic Extract—Lederle, Peanut Allergenic Extract—Lederle, Dog Dander Allergenic Extract—Lederle, Egg White Allergenic Extract—Lederle, Kapok Allergenic Extract—Lederle, Mustard Allergenic Extract—Lederle, Cat Dander Allergenic Extract—Lederle, Rabbit Dander Allergenic Extract—Lederle.

Concentrated Pollen Antigens—Lederle, Series A, B, C, D. E.

Ragweed Combined Pollen Antigens—Lederle, Series E and F.

H. A. Metz Laboratories, Inc.

Ampules Salyrgan Solution, 2 c.c.

National Drug Co.

Undulant Fever Vaccine.

Scott & Bowne Laboratories.

Scott's Norwegian Cod Liver Oil (Plain).

Scott's Norwegian Cod Liver Oil (Flavored).

Scott's Emulsion of Cod Liver Oil.

Wall Chemicals, Inc.

Walco Ethylene for Anesthesia.

The following articles have been exempted and included with the List of Exempted Nonmedicinal Articles (New and Nonofficial Remedies, 1931, p. 481):

Lederle Laboratories, Inc.

Glycerinated Allergenic Extracts—Lederle.

Calco Chemical Co., Inc.

Methylthionine Chloride (Calco).

Merax, Inc.

Merax Mercury Cyanide Solution.

## NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Merthiolate Ophthalmic Ointment, 1:5000.—It contains merthiolate (New and Nonofficial Remedies, 1931, p. 282), one part, in 5,000 parts of a base consisting of liquid petrolatum and wool fat with small amounts of paraffin, white petrolatum and ceresin. Eli Lilly & Co., Indianapolis, Ind.

Tincture Merthiolate, 1:1000.—It contains merthiolate (New and Nonofficial Remedies, 1931, p. 282), 0.1 Gm., and monoethanolamine, 0.1 Gm., dissolved in alcohol, 50 c.c.; acetone, 10 c.c., and water, sufficient to make 100 c.c. Eli Lilly & Co., Indianapolis, Ind.

Mead's Brewer's Yeast Tablets.—Each tablet contains Mead's powdered brewer's yeast (see Revised Supplement to New and Nonofficial Remedies, 1931, p. 18), 0.4 Gm. (6 grains). Mead Johnson & Co., Evansville, Ind.

Scarlet Fever Streptococcus Antitoxin (Refined and Concentrated).—It is prepared by the method of Drs. Dick, by license of the Scarlet Fever Committee, Inc. It is marketed in packages of one syringe containing 2,000 units (prophylactic dose), and in packages of one syringe containing 10,000 units (therapeutic dose). Gilliland Laboratories, Inc., Marietta, Pa.

Trichloroethylene.—Trichlorethylene.—The actions of trichloroethylene have not been investigated comprehensively. It appears to have a selective action on the sensory endings of the trigeminal nerve, whereby it affords relief in trigeminal neuralgia. Different individuals seem to show a wide variation of susceptibility to this action. Large doses cause narcosis, and excessive doses cause death. The liquid is irritant and should not come in contact with the nose when inhaled.

Trichlorethylene-Calco.—A brand of trichloroethylene—N. N. R. It is supplied in the form of tubes containing 1 c.c. Calco Chemical Co., Inc., Bound Brook, N. J. (Jour. A. M. A., March 5, 1932, p. 815.)

Decholin.—Dehydrocholic Acid.—An oxidation product of cholic acid derived from natural bile acids. For a discussion of actions and uses see Bile Salts and Bile Salt Compounds (New and Non-official Remedies, 1931, p. 92). Decholin is proposed for use in functional insufficiency of the liver; to outline the bile ducts at operation and in relieving the possible occurrence of postoperative symptoms; in cholecystography, to accelerate the appearance of the gall-bladder shadow and to hasten removal of residual tetraiodophenolphthalein from the biliary apparatus; and in cardiac decompensation with hepatic congestions, cirrhosis of the liver and similar disturbances of hepatic function with ascites. The drug is also supplied in the form of 3¾ grain tablets. Riedel-de Haen, Inc., New York.

Decholin Sodium.—Sodium dehydrocholate.—The sodium salt of dehydrocholic acid. For a discussion of the actions and uses, see Bile Salts and Bile Salt Compounds (New and Non-official Remedies, 1931, p. 92). The actions and uses are the same as those of decholin. It is administered intravenously and is supplied in ampoules containing 10 c.c. of a five and twenty per cent solution. Riedel-de Haen, Inc., New York.

Tuberculin B. F. (Bovine).—A tuberculin Denys (New and Non-official Remedies, 1931, p. 369), prepared with bovine cultures of Bacterium tuberculosis. It is marketed in 1 c.c. vials; also in serial dilutions. The Cutter Laboratory, Berkeley, Calif. (Jour. A. M. A., March 12, 1932, p. 887).

## FOODS

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

Mead's Powdered Lactic Acid Milk (Whole Milk Cultured) (Mead Johnson & Co., Evansville, Ind.)—Powdered spray-dried whole milk which has been cultured with Streptococcus lactis and incubated to a high lactic acid content; packed in an atmosphere of nitrogen in hermetically sealed tins. The vitamins A and B (complex) of the milk used are practically unchanged; vitamin C is slightly affected. This product is for infant feeding in accordance with a physician's instructions.

S. M. A. (S. M. A. Corporation, Cleveland, Ohio).—A dried powdered homogenized mixture of skim milk, lactose, beef fat, coconut oil, cocoa butter, cod liver oil and potassium chloride. The chemical constants of the fat are similar to those of human milk. The product is claimed to contain sufficient cod liver oil to be antirachitic and antispasmodic in a majority of babies. It should, however, be supplemented with

orange juice or other adequate source of vitamin C. It is intended for infants deprived of human milk. It may also be used as a supplement to human milk.

Powdered Lactic Acid Milk (Half Skim) Acidulated with U. S. P. Lactic Acid (Mead Johnson & Co., Evansville, Ind.).—Powdered spray-dried partially defatted milk (1.5 fat content) containing added lactic acid; packed in an atmosphere of nitrogen in hermetically sealed tins. The product is recommended for infant feeding in accordance with a physician's instructions. The vitamins A and B (complex) remain practically unchanged and vitamin C is only slightly affected.

S. M. A. Concentrated Liquid (Sterilized) (S. M. A. Corporation, Cleveland, Ohio).—A homogenized mixture of skim milk, lactose, beef fat, coconut oil, cocoa butter, cod liver oil and potassium chloride. The chemical constants of the fat are similar to those of human milk fat. The product contains sufficient cod liver oil to be antirachitic and antispasmodic in a majority of babies. It should, however, be supplemented with orange juice or other adequate source of vitamin C. It is intended for infants deprived of human milk, or as a supplement to human milk.

Bowman's Home Leader Bread (A. Bowman & Son, Roanoke, Va.)—A white bread made by the sponge dough method. It is claimed to be a bread of good quality.

Mead's Powdered Whole Milk (Mead Johnson & Co., Evansville, Ind.).—A powdered spray-dried whole milk hermetically sealed in cans in an atmosphere of nitrogen. The vitamins A and B (complex) of the milk used are practically unchanged; vitamin C is slightly affected. It is claimed that the powdered milk mixed with seven parts by weight of water is practically equivalent to standard milk and is suitable for infant feeding.

### PROPAGANDA FOR REFORM

Synthalin.—No preparations given orally are of proved value in the treatment of diabetes. Synthalin, which has been given the most extensive trial, does seem to be beneficial in an occasional case, but Synthalin is far from being nontoxic and in some patients it produces liver damage. It seems best at present to use insulin and nothing else. (Jour. A. M. A., February 13, 1932, p. 573).

Effect of Digitalis Bodies on the Vomiting Reflex.—A moderately toxic dose of digitalis bodies induces attacks of vomiting, which continue and become more intense as the dose is increased. The vomiting may stop for several hours and then recur after the drug has been discontinued. However, the vomiting may cease as the drug is continued and other toxic effects appear in the form of premature contractions of the heart or bigeminal rhythm. An experimental study undertaken to determine if it was possible for digitalis bodies to abolish this emetic action of the drugs, while at the same time increasing the extent of the cardiac poisoning, indicates that physicians should be cautious in relying on nausea and vomiting as a measure of the degree of cardiac poisoning. The continued use of large doses of digitalis bodies may depress the vomiting reflex and at the same time increase the intensity of the cardiac poisoning. (Jour. A. M. A., March 12, 1932, p. 893.)

Sedormid.—"Sedormid" is a carbamide—chemically, allylisopropyl-acetyl-carbamide. It may be looked on as a chemical decomposition substance of allylisopropyl-malonylurea (allylisopropyl barbituric acid), which is the hypnotic component in the nonaccepted but widely advertised proprietary "Allonal." The Council on Pharmacy and Chemistry has not accepted "Sedormid" for inclusion in New and Non-official Remedies, nor has the firm requested consideration of the product. The clinical reports on "Sedormid" are too vague and incomplete, being in the nature of testimonials embodying impressions and opinions, to warrant the claim that "Sedormid" is superior to other hypnotics and comparatively safe. (Jour. A. M. A., March 26, 1932, p. 1104.)

## Book Announcements

**Surgery with Special Reference to Podiatry.** By EDWARD ADAMS, M. D., Professor of Surgery of the First Institute of Podiatry of New York. International Journal of Surgery Company. New York. 1932. Octavo of 480 pages. Cloth. Price, $5.00.

**Human Sterilization.** The History of the Sexual Sterilization Movement. By J. H. LANDMAN, Ph. D., J. D., J. S. D., The College of the City of New York. New York. The Macmillan Company. 1932. Octavo of 341 pages. Cloth. Price, $4.00.

**Disease of the Coronary Arteries (Myocarditis).** By DON C. SUTTON, M. S., M. D., Associate Professor of Medicine, Northwestern University; Attending physician, Cook County Hospital; Chief, Cardiac Follow-Up Clinic, Cook County Hospital, Chicago. and HAROLD LUETH, Ph. D., M. D., Formerly Instructor Physiology, Northwestern University, Chicago. St. Louis. The C. V. Mosby Company. 1932. Octavo of 164 pages. Illustrated. Cloth. Price, $5.00.

**Sodomy's Best Liberator.** A Scientific Adaptation. By MARCUS ROSENBERG. 440 E. 146th St., Bronx, New York. Copyright 1932. Pamphlet of 16 pages. Price, 75 cents.

**Saving Children's Lives.** Proceedings of a Luncheon given by Thomas W. Lamont to the Editorial Consultation Board of the Diphtheria Prevention Commission of the City of New York. Including a Proposal for a Permanent City Health Commission, together with a Special Account of the Methods Proved Successful in the New York Campaign against Diphtheria. Diphtheria Prevention Commission. The Department of Health. City of New York. 1932. Pamphlet of 52 pages.

**Karuk Indian Myths.** By JOHN P. HARRINGTON. Smithsonian Institution. Bureau of American Ethnology. Bulletin 107. United States Government Printing Office. Washington, D. C. 1932. Pamphlet of 34 pages. For sale by the Superintendent of Documents, Washington, D. C. Price, 5 cents.

**Notes on the Fox Waponowiweni.** By TRUMAN MICHELSON. Smithsonian Institution. Bureau of American Ethnology. Bulletin 105. United States Government Printing Office. Washington, D. C. 1932. Pamphlet of 195 pages. For sale by the Superintendent of Documents. Washington, D. C. Price, 35 cents.

XUM

# Virginia Medical Monthly

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# Editorial

## Diverticulitis.

Practitioners must find an interest in all problems connected with the alimentary tract. Events of pathologic origin or even of a functional nature, arising in this system, constitute no small part in the daily problems of the medical practitioner as he deals with the sick. Conditions of misfunction and states of pathology in the sigmoid, however, or even of the colon, itself, while they may be more or less evident, have not been generally or popularly considered by medical men in practice as being of great frequency. Hence, such conditions have not taken an important place in the mind of the practitioner as he hears the complaints of his patients, particularly so as symptoms complained of may be referred to the left lower abdomen and mixed, more or less, in the story told by the patient with "constipation" using "cathartics" and "high colonic irrigations," etc.

Now, diverticulitis should be more definitely considered because, without doubt, the condition exists far oftener than it is recognized and, probably, proceeds from a bad to a worse state without any especial consideration unless discovered by accident or under the salutary practice of careful examination.

Recently, Lynch* has summarized this subject in a short paper and the matter has been discussed by informed observers. From this paper and discussion, material for comment has been obtained. Although this general subject has been in medical publications for 230 years, it has been dealt with in recent years with emphasis only occasionally. It would seem active interest in this subject was aroused in 1898 by Graser's paper. Then there followed a group of studies by Fischer, Beer, and Moynihan, and in 1907 by Mayo and Wilson; in 1908, Telling reviewed the whole subject. Since those early days of the century, many papers have appeared and the subject has been ably discussed. Lynch offers a review and quotes some eight cases illustrating the condition.

It is not, of course, a common condition because in 16,283 autopsies at Bellevue Hospital, between 1904 and 1930, there were only 169 cases of diverticulosis or diverticulitis. However, at the Mayo Clinic, it is stated, that "in one-third of all the patients examined roentgenographically, diverticulitis or diverticulosis was present."

Patients past thirty-five years who have suffered from contipation and have resorted to the customary use of cathartic drugs or have practiced prolonged use of colonic irrigations, may be considered as possible victims of this malady. Such persons may have attacks of pain in the left side: a dull aching on the side opposite from that usually experienced in appendicitis. In connection with the dull pain and with the use of medicine, there may be occasional diarrhea and gas distention and soreness. In the acute form this condition may take on the picture of acute inflammation with fever, leucocytosis and abdominal rigidity. In the more chronic forms there may be a tume-

*J. A. M. A., March 19, 1932, page 973.

faction and tumor formation over their area. As this proceeds, local peritonitis and abscess formation may occur. Rupture or perforation of such a state of diverticulitis brings the patient to an acute state that demands immediate surgical treatment.

The diagnosis of the condition in ordinary practice can be much assisted and improved by giving heed to complaints expressed by the patients as to pain over the left side of the abdomen because it is in the sigmoid and lower colon that diverticulitis most frequently occurs. One interested in the review of this subject may find a good opportunity for it in a perusal of Lynch's paper and his experience with his cases. The discussions by D. B. Roberts and Julius Friedenwald throw interesting sidelights on the subject.

**Consider the Bureau of Medical Economics.***

Members of the Medical Society of Virginia may well consider the development of the function of the Bureau of Medical Economics, as established in March, 1931, by the American Medical Association. Probably outside of the paramount question of "keeping the graduate doctor up-to-date" by post-graduate efforts in medical education, no more important subject claims clearer and more accurate study today than the economics of medical practice. Before the onset of the national depression, when economic extravagance of every sort was in full swing, in that period before the fall of 1929, there was the agitation of the problem of mounting costs of medical care and all its attendant influences; but since the persistent and continued downward progress of financial loss and deflation in this country, following that time, economic problems of complex and conflicting and mixed sorts have been confronting the practical operations of the medical profession.

It is unnecessary even to intimate here the extreme and radical aspects of some of these propositions but it is desirable for our space to call attention to the important fact that a centralized, informed, competent, and unafraid agency of the Americal Medical Association has been created to make a careful and fearless study of these problems. Every doctor in the land may well give attention to this important Bureau and, by every effort, aid and assist it in reaching the facts and in solving the problems to be studied.

*J. A. M. A., Bureau of Medical Economics, page 1170, April 2, 1932.

Editorially, we feel heartily enthusiastic over the Bureau as it sets up this formula as its guide: "A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession."

Business methods and economic principles are essential to such a service and, therefore, in no wise should be considered unimportant to the prime objects of medical practice and its high principles of ethical relations. Business management and economic principles when applied properly, must make for a better physician and a better service to the satisfied patient.

Just observe a few of the subjects that this Bureau proposes to study and report upon to the members:

Capital investment in medicine.
Collection methods and agencies.
Evaluation of patient's ability to pay.
General insurance for physicians.
General investments.
Group practice.
Instruction in medical economics.
Medical fees.
Office plans.
Office systems.
Physician's income.
State, county and municipal health department activities.

Think what a helpful agency this will be to the busy, unbusiness-like medical practitioner, whether young or old, whether successful or not so successful: to all, this information may be of use. "Every question," says the report, "pertaining to medical economics will be considered impartially and without personal bias." Further, "Policies and principles established after careful consideration, supported by factual evidence and, wherever possible, by parallel procedures in the business, industrial or commercial fields will thenceforth govern in similar questions and situations."

Let our readers also note this paragraph of the report: "One must make a clear distinction between commercial and economic interests. Commercialism is characterized by: (1) unreasonable fees; (2) alleviation always predicated on cash in hand or no service; (3) unethical tendencies or practices; (4) destruction or scientific motive in both the individual and the profession at large; (5) transformation of

the profession into a trade or business; (6) destruction of confidence in the profession; (7) an insidious tendency toward state medicine." On the other hand, proper economics of medical practice should be based upon the following principles and motives: "(1) alleviation of suffering, prevention of disease, pursuance of research and the dissemination of dependable information are recognized as the primary obligations of the profession; (2) there should be a just compensation for service rendered; (3) modern ethical business methods are necessary to provide the highest type of service at the most reasonable cost; (4) ethical business methods insure confidence in the profession; (5) correct economic measures insure adequate amount and quality of service to indigent as well as pay patients; (6) the use of ethical business methods and correct economic measures serves to promote in the profession higher scientific attainments because of greater freedom from financial anxiety."

To these very true observations may be added other good and excellent reasons, but chief among them, it is right, fair and proper that such principles of business should obtain between the patient and the physician thereby promoting a sense of fair and honorable dealing on the part of each. Besides, such practices of candor and fairness in ethical economics make for defeat of those unfavorable trends that are today insidiously tending to some sort of so-called "State Medicine" which would strike at the foundation of the highest type of medical service and progress.

This report directs attention to a provision of wise financial forethought in providing for the "rainy day" when it cites a resolution making inquiry of the American Bankers' Association if that organization favors such a plan. The backing of the American Bankers' Association and State Bankers' Association in encouraging savings or reserves on the installment plan to provide for such possible needs in sickness seems to be most salutary and should be encouraged in every way. When installment savings are set up, insuring resources against future needs and requirements, as against the policy of discounting future by over indulgence in purchases to be paid for by installments, more stable economical conditions will prevail and more resistant will be the welfare of the people against "rainy day" conditions that must ever be expected individually and collectively.

This report treats subjects of medical economics such as medical care of the indigent sick, health and accident claim proofs, study of the question whether or not a fee should be properly charged for such service, capital investment and maintenance, income from medical practice, collection methods and agencies, group practice, and contract practice. These and other signally important problems, definitely interwoven with the welfare and efficiency of medical practice in this country, are under consideration by the Bureau. The results of these studies and the advice and suggestions made should be eagerly waited by doctors.

It is easily seen that these suggestions can be of use only in so far as they are disseminated thoroughly throughout the rank and file of medical practitioners. So that the state and county medical committees on economics may do well to keep in touch with the reports of this national bureau and transmit its findings and reports to local membership. The address is Bureau of Medical Economics, American Medical Association, 535 N. Dearborn St., Chicago, Ill.

**Papers on Surgery and Other Subjects by George Tully Vaughan.**

A career in medical practice may be fairly evaluated by the publications made, by positions filled in medical service, and by honors won and bestowed. Other events and conditions enter into such a stock taking of the life work of medical and surgical practitioners, but with the foregoing group of "circumstantials," without more intimate and accurate knowledge of the subject, one may not go far wrong in arriving at an accurate estimation of the workman. By such we have no hesitation in placing here on this page a word of high praise to George Tully Vaughan, honorary member of the Medical Society of Virginia, and to say that it is an honor for this Society to have him on its roll.

Dr. George Tully Vaughan has fortunately taken time to bring together in book form principal articles written by himself during an experience of fifty years. In the papers and publications, as they cover the years, one may note the developments and changes of surgical practice. A wide range of subjects are covered. All show the effects of careful and

thoughtful treatment and reflect credit on the author. The book recording the efforts of a master workman will be also welcomed and appreciated by Dr. Vaughan's many friends in the profession and especially by his former students who have through the years observed and attended upon his lectures and clinics.

It is impossible in this all too brief note to review this work. But it is a pleasure for the Editor of the VIRGINIA MEDICAL MONTHLY to announce receipt of the "Papers on Surgery and other Subjects" by George Tully Vaughan, M. D., L.L.D., F. A. C. S.

# President's Message

**Announcement as to Work on Prenatal and Postnatal Instruction in Virginia.**

It is with satisfaction and pleasure that I make the announcement to the members of the Medical Society of Virginia that the efforts of the Department of Clinical Education and the committee on Prenatal and Postnatal Instruction have been successful in obtaining an appropriation of $10,000 from the Commonwealth Fund Board for carrying on work during the current year. You will be interested doubtless in reading Miss Quin's letter which is inserted here:

"APRIL 6, 1932.

"MY DEAR DR. SUTTON:

"It gives me great pleasure to advise you that at a meeting of the Commonwealth Fund Board, held yesterday, the following vote was taken:

"1. That subject to the appointment of a satisfactorily qualified clinician, an appropriation of $10,000 or such portion thereof as the General Director may determine, be made to the Virginia State Medical Society for the extension courses in postgraduate prenatal and postnatal instruction.

"2. That a reservation of $5,000 be set aside for the second year, conditioned on the Medical Society's continuing its contribution, and the balance being raised from other sources within the state.

"3. That the Society be informed that any action the Fund may take in connection with the third year will depend entirely upon progress of the undertaking and on the willingness of those within the state to assume an increasing financial responsibility."

"We are all delighted that the Board has made the appropriation, and hope that we may hear from you very shortly that the clinician is chosen and work is to begin. I am sending copies of this letter to all members of the Committee on Postgraduate Prenatal and Postnatal Instruction, and to Dr. Draper, Dr. Zehmer, and Dr. Hodges.

Yours most sincerely,
BARBARA S. QUIN,
Assistant Director.

It will be recalled by the members of the Society that last October at the annual meeting in Roanoke the Council and House of Delegates passed a resolution appropriating $2,500 for work in Prenatal and Postnatal Instruction which would be available when the Commonwealth Fund made an appropriation of $10,000 for the same work in this State. It is not intended at this time to go into a detailed statement of all the conditions under which this gift was made, nor is it necessary to recite the discussions engaged in by the joint committee which has been studying this question since the Roanoke meeting. We simply wish to inform the members of the Society of our success in securing the appropriation and to solicit your interest and hearty cooperation.

Following the receipt of Miss Quin's letter, the Joint Committee on Prenatal and Postnatal Instruction met at 2:30 P. M., April 14, 1932, in Richmond at the offices of the Medical Society of Virginia, with all members present, as follows: from the Medical Society of Virginia, Drs. Harrison, Hodges, Daniel and Moore; from the Medical College of Virginia, Dr. Sutton, Chairman of the Joint Committee and Dr. Call; from the University of Virginia, Drs. Flippin and Royster. Other persons present were Dr. Draper, State Commissioner of Public Health, Drs. Baughman and Williams, Obstetricians of the Medical College and the University of Virginia, Miss Edwards, Secretary-Treasurer of the Medical Society, Mr. George B. Zehmer, Director of the Extension Division, University of Virginia, Mr. George W. Eutsler, Secretary of the Joint Committee and Dr. M. E. Lapham, an applicant for the position of clinician who had been invited to attend by Dr. Sutton.

On motion of Dr. Flippin, the Joint Committee accepted with appreciation the donation of the Commonwealth Fund to the Medical Society of Virginia. There was extensive discussion by those present concerning the minute details of setting up the work and selecting a clinician. The plan of instruction decided on by the Committee contemplates the division of the State into circuits of selected centers in which the instructor may meet each class once

a week for a period of ten weeks. It was decided that two circuits of five centers each be conducted between June and November 30th. The first circuit will include the centers of Charlottesville, Lovingston, Lynchburg, Lexington and Staunton, with Orange, Luray and Woodstock as alternates. The second will include the centers of Richmond, Petersburg, Hopewell, Burkeville and Farmville, with Lawrenceville and South Hill as alternates. The enrollment of ten in a center was fixed as a minimum, allowing the Extension Division to organize with smaller enrollments as conditions seem to justify.

Each circuit shall have five centers and each course include ten meetings. Following Miss Quin's suggestion, it was thought best to charge a small fee for the course, and after some discussion, the Joint Committee fixed the fee for the course at $5.00, deciding at the same time to endeavor to induce as many physicians as possible to take the course. The committee felt that due to economic conditions throughout the State at this time there is no other probable source of revenue available, and it was thought wise to fix the fee for this year at the minimum because of the liberal contribution made by the Medical Society to the program on Prenatal and Postnatal Instruction.

In selecting a clinician for undertaking this work the Committee was fortunate in having several outstanding applicants to consider. Dr. Sutton, Chairman, called in consultation the teachers in Obstetrics and Gynecology of the University of Virginia and the Medical College of Virginia. Dr. Williams and Dr. Greer Baughman have met regularly with the Committee, and their advice in selecting a clinician has been invaluable. These gentlemen, after careful consideration of the applicants for the position and a study of their credentials, heartily endorsed Dr. Maxwell E. Lapham. The Committee, after due consideration and conference with Dr. Lapham, offered him the position, agreeing that his work should begin May 1st. The following information concerning Dr. Lapham will be of interest:

He is thirty-two years of age and single. Graduated from the University of Pennsylvania, College Department in 1922 and from the University of Pennsylvania Medical School in 1925. After graduation, served an internship at the Presbyterian Hospital, a rotating service, and spent five months as Assistant Surgeon in the Grenfell Foundation in Labrador. Upon his return to Philadelphia, he became Chief Resident of the University of Pennsylvania Hospital, and the year following Resident in Obstetrics under Dr. Edmund B. Piper at the University Hospital. In 1929, he was appointed Assistant Obstetrician in the same hospital, and also became Instructor in Obstetrics in the University of Pennsylvania Medical School. The latter position included being Consultant to the Southeastern Dispensary which is the undergraduate Out-Patient Maternity Service of the Medical School. He was then appointed Assistant Obstetrician to the Philadelphia Lying-In Hospital. A distinguished professor of obstetrics in Philadelphia has this to say in a letter recommending Dr. Lapham:

> "In so far as Dr. Lapham's character is concerned, I have from the first considered him invaluable as an assistant and co-worker. He has a remarkably pleasing personality and is universally liked and respected by all who know him. His tact is boundless, his ability for organization and instruction excellent. It would seem to me that you would be unable to find any young physician better fitted for the job you have in mind than Dr. Lapham, as I consider him to be one of the finest young obstetricians I have ever known.
>
> "I should be very pleased to hear from you further in regard to this matter, and also to know how your plans are completed for this very interesting work."

Having arrived at this point in preparation for this campaign of education, we wish further to secure the whole-hearted endorsement of the entire medical profession in the State.

"The method of procedure in organizing centers will in general be as follows: First, the use of publicity of a general nature through news articles carried by State and local papers and the VIRGINIA MEDICAL MONTHLY. This will be followed by publicity or rather information of a specific character through (a) circular letters to physicians in the vicinity of the centers organized, (b) personal letters from Extension officials, (c) printed (official) announcements and most important of all (d) personal visits to physicians by members of the Extension Division.

"In addition, the cooperation of local leaders will be secured especially that of the local medical society whenever one is available and interested, of local hospitals and of leading physicians. The Joint Committee may help very effectively by writing personal letters es-

pecially to "key" men, by personal visits whenever possible and especially to speak before local medical societies and at times by direct telephone conversation with leading representatives in the local centers. Finally, there will be visits to the centers by members of the Extension Division to arrange in detail for places for class meetings, to confer over and decide upon the time of meetings and other details of local importance."

"Local societies, both county and city, should be encouraged to formulate their own educational programs and when local plans do not interfere with the larger plan of the Joint Committee, the services of the Extension instructor should be offered to the local societies whenever requested. Perhaps the ideal in post-graduate medical education will be the development of the local societies as an educational agency to the point where they can plan and foster educational programs of the highest order and where the chief function of the State Society will be to assist the local societies in carrying out their respective programs."

I. C. HARRISON, M. D., *President,*
*Medical Society of Virginia.*

# Department of Clinical Education

**Post-Graduate Clinic at the University of Virginia Hospital.**

The ninth post-graduate clinic at the University of Virginia Hospital on April 28th and 29th, was not only the largest in respect to attendance, but the interest, enthusiasm and responsiveness displayed in the meetings was notably greater than at previous sessions.

The program of the two-day clinic, with the addition of ward rounds and of evening meetings devoted to open discussion of topics submitted by the guests, was as follows: "Hematuria," Dr. J. H. Neff; "Obstetric Care," Dr. T. J. Williams; "Rheumatic Fever and Its Complications," Dr. L. T. Royster; Symposium: "Interpretations of Gastric Symptoms," Dr. J. C. Flippin, Dr. D. C. Smith, Dr. W. E. Brown, Dr. W. H. Goodwin; "The Commoner Diseases of the Heart," Dr. J. Edwin Wood; "Clinical Manifestations of Arterial Diseases of the Extremities," Dr. Edwin S. Lehman.

The list of physicians enrolled for the clinic follows:

ALTAVISTA—Dr. W O. Smith
ARRINGTON—Dr. B. F. Randolph
Dr D. C. Wills
BATESVILLE—Dr. R. L. Page
BASIC CITY—Dr. R. S. Griffith
BLACKSBURG—Dr Ford K. Lucas
Dr. D. S. Phlegar
BEDFORD—Dr. J. A. Rucker
CHARLOTTESVILLE—Dr. J. C. Coulter
Dr. T. H. Daniel
CHATHAM—Dr C. D. Bennett
CISMONT—Dr. R. B. Shackelford
CLIFTON FORGE—Dr. L. A. Houff
Dr. T. J. Roemer
COLONIAL BEACH—Dr E. F. Gouldman
COVINGTON—Dr. N. B. Jeter
CROZET—Dr. E. D. Davis, Jr.
CULPEPER—Dr. J. T. Chelf
Dr. D. W Kelly
Dr. J. L. Stringfellow
CUMBERLAND—Dr. E. B. Nuckols
DANVILLE—Dr. I. C. Harrison
Dr. E B. Robertson
ELKTON—Dr. M. T. McCulloch
FARMVILLE—Dr. Dwight Rivers
FISHERSVILLE—Dr. H. F. White
FREDERICKSBURG—Dr. J. E. Cole
Dr. C. Mason Smith
FREE UNION—Dr. W A. Kyger
FRONT ROYAL—Dr. D. M. Kipps
HARRISONBURG—Dr. A. C. Byers
Dr. N. M. Canter
HOT SPRINGS—Dr. Ira T. Hornbarger
Dr. J. M. Jarman
Dr. M. B. Jarman
Dr. Edgar A. Pole
IVY—Dr. H. L. Baptist
LOTTSBURG—Dr. R. E. Booker
LOUISA—Dr. H S. Daniel
Dr. H. W. Porter
LYNCHBURG—Dr. Powell Dillard
Dr. Ernest G. Scott
NORTH GARDEN—Dr. Hunter Williams
NORTON—Dr. T. J. Tudor
ORANGE—Dr. Lewis Holladay
Dr. Lee Taliaferro
PEMBROKE—Dr. S. A. Tuck
PETERSBURG—Dr. W. B. McIlwaine
PINEY RIVER—Dr. S. G. Miller
QUANTICO—Dr. C. V. Hatchette
RICHMOND—Dr. T. D. Davis
Dr. Edgar C. Harper
SCOTTSVILLE—Dr. Percy Harris
STANARDSVILLE—Dr. E. D. Davis
STAUNTON—Dr. G. R. Fisher
Dr. W. A. Murphy
Dr. M. J. Payne
Dr. A. F. Robertson, Jr.
SHENANDOAH—Dr. H. C. Hisey
Dr. B. C. Shuler
Dr. Jos. J. Waff
STATE FARM—Dr. L. W. Holladay
SWOOPE—Dr. W. F Hartman
TURBEVILLE—Dr. J. A. Owen
TYE RIVER—Dr. J. F. Thaxton

XUM

VINTON—Dr. N. M. Robinson
WAYNESBORO—Dr. J. F. Hubbard
WEYERS CAVE—Dr. H. G. Middlekauff
WHITE POST—Dr. Chas. O. Dearmont

**Speakers Available for Society Programs.**

The list of members of the faculties of the Medical College of Virginia and the Department of Medicine of the University of Virginia, with the topics on which they prefer to speak, is being reprinted in pamphlet form from the last issue of the MEDICAL MONTHLY. This list will serve as a guide for officers charged with the arrangement of programs, and the Department of Clinical Education stands ready to assist in arranging engagements for these speakers wherever their services are desired.

GEO. W. EUTSLER,
*Executive Secretary.*

**Post-Graduate Course in Prenatal and Postnatal Care.**

The organization of the first circuit for the post-graduate course in prenatal and postnatal care, with centers located in Lovingston, Lynchburg, Lexington, Staunton and Charlottesville, is being pushed to hurried but successful completion in time for the classes to begin work in the week of May 30th. The course is offered, in cities and counties where it is approved by vote of the medical societies, under the administration of a Joint Committee on Prenatal and Postnatal Instruction composed of representatives of the Medical Society of Virginia and of the two medical colleges, and under the instruction of Dr. Maxwell E. Lapham, the Field Clinician, whose appointment was announced in the last issue of the VIRGINIA MEDICAL MONTHLY.

Dr. Lapham was selected for this position after an intensive search for the best trained instructor available. He was highly recommended by the officials of the University of Pennsylvania Medical School and Hospital, especially by Dr. Edmund B. Piper, head of the Department of Obstetrics, Dr. Floyd E. Keene, Professor of Gynecology, and Dr. Charles C. Norris, Director of the Department of Obstetrics and Gynecology. Since his graduation from the University of Pennsylvania Medical School in 1925, Dr. Lapham has served with distinction as interne for two years in rotating service at the Presbyterian Hospital of Philadelphia, five months as assistant surgeon in the Grenfell Foundation in Labrador, one year as chief resident at the University of Pennsylvania Hospital, consultant to the Out-Patient Maternity Service of the Medical School and assistant obstetrician to the Philadelphia Lying-In Hospital, and three years as resident in obstetrics, assistant obstetrician, instructor in obstetrics and active assistant of Dr. Piper.

Dr. Lapham has appeared before the Augusta, Albemarle and Rockbridge County Medical Societies and the Lynchburg Academy of Medicine, with an engagement to speak before the Nelson County Society on Monday, May 23rd. He has presented the educational program of the Medical Society of Virginia with such favorable results that each of the four societies has unanimously approved the organization of a class. The Augusta County Society voted to sponsor the course and organize a group with a minimum enrollment of ten as an educational project of the Society itself, and the committee composed of Drs. Robertson, Womack and White have made the establishment of the class certain by securing ten enrollments.

The ten two-hour meetings of each course will consist of a lecture with clinical demonstrations followed by a round-table conference when the subject of the day may be discussed informally. The general subjects for the clinics as briefly outlined by Dr. Lapham are as follows:

1. Early Diagnosis of Pregnancy.
2. Prenatal Examination—in detail.
3. Adjuncts to Careful Diagnosis and Treatment of Pregnant Women.
4. Detailed Instructions to Patient.
5. Preparation For and Management of Labor and Delivery.
6. Immediate Care of New Born Baby.
7. Immediate Postpartum Complications.
8. Gynecological Examinations—General and Postpartum.
9. Bleeding in Pregnancy and Puerperium.
10. Toxemias of Pregnancy.
11. Suggested Subjects for Lecture.

The details for the first five centers, according to arrangements made in the first stages of organization, are as follows:

NELSON COUNTY: (Subject to final approval at the meeting of the Nelson County Medical Society on May 23rd.) The class will meet on Mondays in Lovingston, beginning May

30th. *Enrollments:* Drs. S. G. Miller, B. F. Randolph, J. F. Thaxton and D. C. Wills.

LYNCHBURG ACADEMY OF MEDICINE: The course was approved by unanimous vote of the Lynchburg Academy of Medicine on May 19th. The class will meet on Tuesdays, beginning May 31st, at 2:00 P. M. in the Municipal Building, 1001 Church Street. *Enrollments:* Drs. S. E. Oglesby and F. O. Plunkett.

LEXINGTON: The course was approved by unanimous vote of the Rockbridge County Medical Society on May 18th. The class will meet on Wednesdays, beginning June 1st, at 2:30 P. M. in the Stonewall Jackson Memorial Hospital. *Enrollments:* Drs. J. H. Bailey, H. R. Coleman, H. R. Coleman, Jr., R. P. Cooke, F. M. Leech, J. E. Loyd, Hunter McClung, J. E. Seebert, F. L. Thurman, E. P. Tompkins and Reid White, Jr.

STAUNTON: The course was approved by unanimous vote of the Augusta County Medical Society on May 12th. The class will meet on Thursdays, beginning June 2nd, at 11:00 A. M. in the King's Daughters Hospital. *Enrollments:* Drs. Kenneth Bradford, G. C. Campbell, W. F. Hartman, W. A. Murphy, M. J. Payne, C. W. Putney, A. F. Robertson, Jr., W. C. Roller, A. L. Tynes and J. E. Womack.

ALBEMARLE COUNTY: The course was approved by unanimous vote of the Albemarle County Medical Society on May 5th. The class will meet on Fridays, beginning June 3rd, at 3:00 P. M. in the Out-Patient Department of the University Hospital. *Enrollments:* Drs. Percy Harris, E. L. McQuade, W. D. Macon, John Nokes, M. L. Rea and T. J. Williams.

At the conclusion of this circuit during the first week in August, the Joint Committee plans to begin immediately upon a second circuit of five centers, located in the vicinity of Richmond and Farmville, provided always that the local society favors the organization of the course in its community.

GEO. W. EUTSLER,
*Secretary Joint Committee.*

# Proceedings of Societies

## The Medical Society of Northern Virginia

Met in Strasburg, Va., April 12th, with a good attendance. Papers were read by Drs. Hunter H. McGuire, James A. Miller and J. E. Harris, all of Winchester. An outstanding feature of this meeting was the reporting of several cases of unusual interest by members.

This Society is composed of doctors in the counties of Clarke, Frederick, Page, Shenandoah, Warren and Rappahannock. Its officers are: President, Dr. C. H. Iden, Berryville; vice-president, Dr. G. G. Crawford, Strasburg; and secretary-treasurer, Dr. J. E. Harris, Winchester.

## The Mid-Tidewater Medical Society

Held its regular quarterly meeting at Saluda, in the Court House on Tuesday, April 26th, with its president, Dr. R. D. Bates, in the chair. During the morning a business session was held, at which time reports were had from the Toxin-Antitoxin Clinics. The success of these was variable according to reports. It was the general opinion that the biggest difficulty was the segregation of true charity cases from those able to pay, and this led to the following resolution, which was adopted:

RESOLVED, That the Mid-Tidewater Medical Society go on record as being opposed to holding mass clinics for any persons except indigent patients, unless done so at the request of the local doctors and with their consent.

The doctors and guests were served a delicious lunch at the Hotel by the local doctors.

At the afternoon session, the following papers were read: Treatment of Pneumonia in Children, Dr. B. B. Jones, Richmond; Treatment and Early Diagnosis of Whooping Cough, Dr. Ambrose McGee, Richmond; Vomiting in Infancy, Dr. Thos. D. Jones, Richmond. Dr. Douglas Chapman, Richmond, presented a movie of the ox heart in action. Drs. Flannagan and Bagby of the State Department of Health spoke on Health Work with the Physicians in Tuberculosis and Maternal Welfare.

After adopting resolutions of appreciation to the doctors on the program for their helpful papers and to the local doctors for their hospitality, the meeting adjourned at 5:30, to meet at Camp Chesapeake on Tuesday, July 26, 1932.

M. H. HARRIS, M. D., *Secretary.*

**Roanoke Academy of Medicine.**

The third hospital meeting of the Academy was held at the Roanoke Hospital, April 18, 1932, at 8:30 P. M., at which time the following program was given:

Perforating Ulcer of the Stomach—Dr. T. D. Armistead.
Subacute Bacterial Endocarditis—Dr. W. C. Stephenson.
The Intravenous Use of Phenobarbital as a Preanesthetic Agent—Dr. Rees Morgan.
Traumatic Cyst of Parotid Gland—Dr. L. D. Keyser.
Pregnancy Tests—Dr. John O. Boyd.
Cancer of Gall-Bladder—Dr. E. C. Ambler.
Secondary Obstruction Following Cholecystectomy—Dr. W. L. Powell.

Dr. H. Heyward Westcott presided as chairman.

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At the regular meeting of the Academy at Hotel Roanoke on Monday, May 2nd, a Preventive Medicine Program was given. Two papers read were as follows:

Medical Supervision of Our Schools and Adoption of a Sanitary Code—Dr. C. B. Ransone.
Food and Food Habits in the Pre-School Child—Dr. J. M. Bishop.

These papers were followed by a general discussion by members of the Society.

The next meeting of the Academy will be at the Jefferson Hospital, after which meetings will be discontinued for the summer.

C. H. Peterson, M. D., *Secretary.*

**The Clinch Valley Medical Society**

Held its Spring meeting at Appalachia, Va., April 23rd, under the presidency of Dr. Frank Pyott, of Tip Top, Va. Other officers of the Society are Dr. G. B. Setzler, Pennington Gap, and Dr. V. W. Quillen, Nickelsville, vice-presidents, and Dr. C. B. Bowyer, Stonega, secretary-treasurer. Forty-seven members were registered for this meeting, the program of which was arranged through the Department of Clinical Education of the State Society. A business session was held before lunch. Following a short address by the president at the afternoon session, talks were given by Drs. Edwin P. Leham, L. T. Royster, and T. J. Williams, of the University of Virginia, and by Dr. Warren F. Draper, State Health Commissioner.

Election of officers will be held at the next meeting, which is to be in Norton, Va., next October.

**Medical Society of Maryland, Virginia and the District of Columbia.**

At the semi-annual meeting of this Society in Norbeck, Md., on May 18th, the meeting was conducted by the retiring president, Dr. G. Frank Simpson, of Purcellville, Va., until the election of officers when the new president, Dr. Guy W. Leadbetter, of Washington, D. C., took charge. Dr. Samuel A. Nichols, Clarksville, Md., and Dr. W. Allen Griffith, Berwyn, Md., were elected vice-presidents, and the following, all of Washington, were re-elected: recording secretary, Dr. Robert E. Moran, corresponding secretary, Dr. Joseph D. Rogers, and treasurer, Dr. Robert Scott Lamb.

**The Southside Virginia Medical Association**

Met in Petersburg, Va., at the Central State Hospital, on March 8th, with a full attendance. Dr. Nolan D. C. Lewis, of St. Elizabeth's Hospital, Washington, D. C., gave the principal address of the meeting, his subject being Early Psychoneurosis. This with all other papers on the program was freely discussed. After the scientific program the visiting doctors were entertained at a delightful buffet dinner by Dr. H. C. Henry and the staff of the Hospital. Dr. Ruth Mason, Petersburg, is president, and Dr. R. L. Raiford, Franklin, secretary of the Society.

The next meeting will be on June 14th, in Suffolk, Va.

# News Notes

**Invited Speakers for the Richmond Meeting.**

Dr. I. C. Harrison, president of the Medical Society of Virginia, announces that he has secured as his special guests for the annual meeting, Dr. Robert B. Osgood, Boston, Mass., professor emeritus of orthopedic surgery at Harvard University, and Dr. William Minor Dabney, Baltimore, prominent general practitioner, and a former Virginian. Papers by two such men should add much to the interest of the meeting to be held in Richmond, November 1st, 2nd and 3rd.

**American Medical Association.**

The eighty-third annual meeting of the Association in New Orelans, May 9th to 13th,

furnished much of interest scientifically and socially. There was a registered attendance of approximately 2,700. Thirty-six of these were from Virginia and represented all sections of this State. Dr. E. H. Cary, Dallas, Texas, succeeded Dr. E. Starr Judd, of Rochester, Minn., as president. Dr. Dean Lewis, Baltimore, was made president-elect; Dr. Rudolph Matas, New Orleans, vice-president; and Dr. Olin West and Dr. Austin A. Hayden, Chicago, were both re-elected as secretary and treasurer, respectively.

Milwaukee was selected for the 1933 place of meeting.

The following is a list of the Virginians who were in attendance:

Dr. E. L. Alexander, Newport News.
Dr. O. T. Amory, Newport News.
Dr. Howard Armstrong, Harrisonburg.
Dr. O. O. Ashworth, Richmond.
Dr. J. W. Cox, Alexandria.
Dr. B. C. Culler, Martinsville.
Dr. R. M. DeHart, Floyd.
Dr. Warren F. Draper, Richmond.
Dr. E. E. Epperson, Meadow View.
Dr. T. W. Hankins, Fordwick.
Dr. Wm. L. Harris, Norfolk.
Dr. S P. Hileman, Millboro.
Dr. O. L. Hite, Richmond.
Dr. J. M. Holloway, Fredericksburg.
Dr. J. Shelton Horsley, Richmond.
Dr. James W. Hunter, Norfolk.
Dr. Southgate Leigh, Norfolk.
Dr. P. D. Lipscomb, Richmond.
Dr. Wm. K. Lloyd, Christiansburg.
Dr. W. B. Martin, Norfolk.
Dr. W. A. McGee, Richmond.
Dr. Hunter H. McGuire, Winchester.
Dr. E. B. Miller, Elkton.
Dr. R L. Payne, Norfolk.
Dr. J. W. Sayre, Hampton.
Dr. E. G. Scott, Lynchburg.
Dr. R. F. Simms, Richmond.
Dr. James B Stone, Richmond.
Dr. L. E. Stubbs, Newport News.
Dr. E. C. S. Taliaferro, Norfolk.
Dr. D. M. Thomasson, Lynchburg.
Dr. J. R. Tucker, Williamsburg.
Dr. Warren T. Vaughan, Richmond.
Dr. Tiffany J. Williams, University.
Dr. David C. Wilson, University.
Dr. G. W. Young, Pennington Gap.

**News from University of Virginia, Department of Medicine.**

On April 4th, Dr. Edwin P. Lehman addressed the Staff Meeting of the Southside Community Hospital in Farmville.

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On April 19th, Dr. H. B. Mulholland spoke before the South Piedmont Medical Society, meeting in Danville, on the subject of Diabetes.

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On April 22nd, Dr. C. C. Speidel read a paper, by invitation, before the American Philosophical Society in Philadelphia on The Growth and Repair of Living Nerves. On May 10th, he gave the principal address on this same subject on the occasion of the annual initiation exercises of the Virginia Chapter of Sigma Xi.

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At the meetings of the Virginia Academy of Science at Hollins College on April 22nd and 23rd, Dr. S. W. Britton spoke on Some Effects of Cortico-Adrenal Extract and other Substances on Adrenectomized Animals; Dr. E. L. Corey on The Induction of Precocious Sexual Maturity by Cortico-Adrenal Extract; Dr. H. E. Jordan on Ovarian Gestation; Dr. J. E. Kindred on A Young Human Ovum; and Dr. D. C. Smith on Increase in the Permeability of the Central Nervous System to Drugs by Jugular Compression.

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At the meeting of the Clinch Valley Medical Society at Appalachia on April 23rd, Dr. Edwin P. Lehman spoke on Arterial Disturbances in the Extremities, Dr. L. T. Royster on Nephritis in Children, and Dr. T. J. Williams on Backache in Women.

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At the meeting of the University of Virginia Medical Society on April 25th, Dr. Warren T. Vaughan, of Richmond, spoke on The Control of Pollen Allergy.

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On April 27th, Dr. H. E. Jordan attended the meeting of the Division of Medical Sciences of the National Research Council in Washington.

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At the meetings of The Federation of American Societies for Experimental Biology in Philadelphia, from April 27th to 30th, Dr. S. W. Britton read a peper on Effects Produced by Cortico-Adrenal Extract on Normal Animals; Dr. Alfred Chanutin on Studies in Kidney Insufficiency Produced by Partial Nephrectomy; Dr. E. L. Corey on Observations on Circulation in the Fetal Albino Rat; and Mr. Herbert Silvette (Porter Fellow in Physiology) on Some Effects Produced in Vitro by Cortico-Adrenal Extract.

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On the night of May 2nd, Dr. Karl T. Compton, President of the Massachusetts Institute of Technology, spoke before the Graduate Scientific Club on Science Finds a Way.

XUM

The Commencement Exercises of the Graduating Class of the University of Virginia Hospital School of Nursing were held on the afternoon of May 5th. The class numbered thirty-one. The address to the graduates was given by Dr. Winford H. Smith, Director of the Johns Hopkins Hospital, who spoke on Tendencies in Nursing Education.

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Dr. H. B. Mulholland spoke on Diabetes before the Rockingham County Medical Society in Harrisonburg on May 9th.

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Dr. H. H. Hazen, of Washington, D. C., spoke on Skin Diseases in the Negro before the University of Virginia Medical Society on May 9th.

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The ninth Post-Graduate Clinic, given by the Medical Staff, was held at the University of Virginia Hospital on April 27th and 28th. Sixty-nine doctors were in attendance.

**News Notes Medical College of Virginia.**

Dr. William D. Cutter, Secretary, Council on Medical Education and Hospitals, American Medical Association, delivered the commencement address at the close of the ninety-fourth session of the Medical College of Virginia, Richmond, on Tuesday, May 31st.

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The Medical College of Virginia, Richmond, conferred the honorary degree of doctor of science upon General Walter D. McCaw, an alumnus, at the commencement exercises. Dr. McCaw was chief surgeon of the A. E. F. from October, 1918, to July, 1919.

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Frank L. Apperly, M. A., M. D., Sc. D., has accepted the professorship of pathology at the Medical College of Virginia, Richmond. Until recently Dr. Apperly was a member of the department of pathology of the University of Melbourne. He was a Rhodes scholar and graduated in medicine at Oxford in 1920. Dr. Apperly has done important scientific work chiefly in pathology both in Europe and in Australia.

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Dr. Joseph A. White, emeritus professor of ophthalmology and otolaryngology of the Medical College of Virginia, celebrated his eighty-fourth birthday by addressing the senior and junior students and faculty of the college. Dr. White's subject was *Ophthalmology During My Lifetime*. At the close of his address he was presented with flowers and generously applauded by students and faculty.

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Graduation exercises of the St. Philip Hospital school of nursing were held Monday, May 23rd, at 3:30 o'clock. Mr. Richard W. Carrington will deliver the commencement address to the graduating class which numbers fourteen. Mr. Carrington is chairman of the Richmond committee on inter-racial cooperation.

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The college was represented at the North Carolina Dental Society meeting at Elizabeth City, N. C., May 2nd-3rd-4th, by Dr. Harry Bear, Dr. A. L. Simpson, Dr. A. O. James, Dr. G. A. C. Jennings and Dr. I. T. Hardy.

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The annual post-graduate clinic of the college was held May 27th and 28th. Dr. F. J. Wampler was chairman of the committee in charge of this clinic.

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A new record for service was set by the outpatient department of the Medical College of Virginia during the month of April, as shown in the report for this period completed by Dr. F. J. Wampler, director of the department. For the month there were 5,436 visits by patients for treatment, an increase of several hundred over any previous month.

The average number of patients daily was 209; on one day the total reached 267.

The great increase in the work of the department during the last few months could have been handled satisfactorily only through the assistance of the Junior League of Richmond, which has generously furnished two workers daily to assist with handling the complicated task of patient's records. This work has been invaluable, and is appreciated both by the patients and college officials.

For the patients during April nearly 2,000 prescriptions were filled, and 1,621 laboratory diagnostic examinations were made. Fifty-nine per cent of the patients were unable to pay even the small fees charged by the clinic, which has created a definite problem in financing clinic activities.

More than one-half the patients were male and almost one-half of them were white. Approximately one-sixth of the patients had never been to the clinic before.

**News Notes from the Duke University School of Medicine and Duke Hospital.**

On the evening of April 22nd, Dr. Ernest W. Goodpasture, Professor of Pathology, Vanderbilt University, Nashville, Tenn., lectured at the Duke Hospital on Cytotropic Viruses.

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On May 10th, Dr. Hugh H. Trout, of Jefferson Hospital, Roanoke, Va., gave a clinic on the Release of Pericardial Adhesions.

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On May 9th, 10th and 11th the National Board examinations were given at the Duke University School of Medicine, with twenty-one students taking Part I and six taking Part II.

**Dr. Emily Gardner**

Announces the opening of her offices at 1100 West Franklin Street, Richmond, Va., for the practice of pediatrics. Since her resignation from the Bureau of Child Health, Virginia State Department of Health in 1928, she has interned at the Willard Parker Hospital and the Babies' Hospital, both of New York. Last year, with the aid of the Mary Putnam Jacobi Fellowship Fund, she studied in England, Scotland and Austria.

**The American Association for the Study of Goitre**

Is to hold its annual meeting at Hamilton, Ontario, Canada, June 14th, 15th and 16th. The Royal Connaught Hotel will be headquarters for the meeting. The scientific sessions are open to any member of the medical profession in good standing, upon payment of the registration fee of five dollars. There will be hospital clinics, dry clinics, addresses and papers by members. Cards of admission to hospital clinics may be obtained on registration. Dr. M. O. Shivers, Colorado Springs, Col., is president, Dr. Henry S. Plummer, Rochester, Minn., president-elect, Dr. J. R. Yung, Terre Haute, Ind., corresponding secretary, and Dr. F. B. Dorsey, Jr., Keokuk, Ia., recording secretary.

**Dr. J. E. Nance,**

Recently of Franklin, Va., is now connected with the staff of the New Jersey State Hospital, at Trenton, N. J. Dr. Nance is an alumnus of the Medical College of Virginia, in the class of '29.

**Air Ambulances in Siam.**

A novel feature of the health work in Siam is the air-ambulance service. Owing to lack of highways, the usual means of transport is the bullock cart. As this method is too slow for patients requiring urgent medical treatment, the Government has arranged that the regular mail-service airplanes shall also carry sick persons, physicians, and medical supplies. Persons unable to pay are carried free of charge; for others there is a fixed mileage rate. Medical supplies for combating epidemics are transported free.

Siam now has nine Red Cross health centers, the first having been opened in 1923. This far-Eastern country, whose progressive absolute ruler recently visited the United States, also has a school, opened in 1925, which offers a six-month course in public-health nursing and midwifery to graduate nurses.

**Dr. W. L. Varn,**

South Hill, Va., has been elected vice-president of the Rotary Club of that place for the coming year.

**The Tri-State Hospital Association of Virginia, North Carolina and South Carolina**

Held a splendid meeting in Richmond, Va., May 17th, 18th and 19th, with a registered attendance of over two hundred. Following a subscription dinner on Wednesday evening, there were several talks and a number of lantern slides of North Carolina hospitals were shown. A dance followed this session. It was decided to hold the next meeting in Charleston, S. C., during the time when the azalea gardens are in bloom.

The members from the three states held separate business sessions. There was a rather small delegation from South Carolina and all of the same officers were re-elected. Mr. F. O. Bates, of Roper Hospital, Charleston, continues as president.

The North Carolina section elected Dr. Richard Boyd Davis, of Greensboro, as president, and re-elected Mr. E. G. Farmer, of Wilson, as secretary-treasurer.

The Virginia section elected Dr. John Bell Williams, of St. Luke's Hospital, Richmond, president; Dr. J. L. McElroy, of Memorial Hospital, Richmond, vice-president; and Mr. M. Haskins Coleman, Jr., of Johnston Willis Hospital, Richmond, was re-elected secretary-treasurer.

**Dr. Frank P. Coleman,**

Of the class of '31, Medical College of Virginia, after practicing for a time in West Virginia, has located at Stuarts Draft, Va.

XUM

**Elected to Raven Society.**

Among those elected members of the Raven Society at the University of Virginia, this Spring, are Dr. J. Shelton Horsley, Richmond, and Dr. James Morrison, Lynchburg, from the alumni, and Dr. Kenneth F. Maxcy, of the faculty of the University. The Raven Society is the historic local society of the University.

**The Virginia State Dental Association**

Held its annual meeting at Winchester May 16th, 17th and 18th. This meeting was held jointly with the West Virginia State Dental Society.

This meeting was largely attended by members from Virginia and West Virginia and by many dentists from the neighboring states. An exceptional program was presented by prominent practitioners from various sections of the country. The lectures were varied and covered a wide range of subjects.

Among the public health officials who gave lectures were Dr. Hugh S. Cumming, Surgeon General United States Public Health Service, Dr. W. T. Henshaw, Health Commissioner State of West Virginia, and Dr. W. F. Draper, Health Commissioner State of Virginia.

About one hundred table clinics were presented and this feature proved a most interesting part of the meeting.

Dr. Ralph P. Snapp, of Winchester was president of the Virginia Association and presided at this meeting. The new officers elected at this meeting are Dr. W. H. Street, Richmond, president; Dr. S. D. Kent, Danville, president-elect; Dr. A. M. Wash, Richmond, re-elected secretary-treasurer.

The association decided to hold its 1933 meeting in Richmond.

**Dr. E. G. Gill,**

Roanoke, Va., was re-elected district governor of the Virginia Lions' Club, at the meeting held in May.

**Officers of Winchester Memorial Hospital.**

At the meeting of the Board of Directors of the Winchester, Va., Memorial Hospital, on May 22nd, Dr. Hunter H. McGuire was re-elected president of the Board, which office he has held since the founding of the hospital thirty-one years ago. Dr. J. E. Harris was also re-elected secretary.

**The International Congress on Biliary Disease**

Is to meet at Vichy, France, September 19-22, 1932.

Under the patronage of the leading clinicians and investigators of France, an important series of symposia dealing with ailments (particularly calculi) of the liver and biliary tract has been arranged. Representative authorities from the leading countries of Europe, North and South America and Asia will present these or take part in the formal discussions.

All phases of the subject chosen will receive attention. The sections upon roentgenology, experimental investigation and therapy offer unusual progress. The leading surgeons of Europe will present the latest in operation technique. There will be an unusual pathologic exhibit.

An attractive series of social and recreational features has been planned in a beautiful environment.

Participation in all the educational and social features of the Congress is secured by registration and the payment of a fee of 50 francs (French).

Reduced rates for travel and hotel residence have been secured.

The official program of the Congress and information respecting steamship rates, hotel accommodations, etc., may be secured by addressing: Frank Smithies, M. D., President of the Congress for the United States, 920 N. Michigan Avenue, Chicago, Ill.

**Dr. Snowden C. Hall**

Has just located in Richmond, Va., with offices in the Medical Arts Building, where he is associated with Dr. William H. Higgins, in the practice of medicine. Dr. Hall is a native of Kilmarnock, Va., a graduate of William and Mary College (1923) and of the Harvard Medical School (1930). He recently completed eighteen months' service at the Boston City Hospital.

**Are You Going Abroad This Summer?**

If so, why not secure information through the offices of the MONTHLY with regard to the European Clinic Tour which sails from New York on July 19th? Rates have been reduced since the first announcement of this Tour and this is a wonderful opportunity for any physician who wishes to visit the clinics while traveling in Europe.

**Dr. B. A. Middleton,**

Emmerton, Va., has been elected one of the delegates from Richmond County to the State Democratic Convention in Richmond, on June 9th.

**Dr. Benjamin L. Hume,**

Recently located at Nokesville, Va., announces his removal to Orange, Va., where he is continuing the practice of his profession.

**Dr. Bernard Barrow,**

Blackstone, Va., R. F. D., has been elected one of the delegates from Brunswick County to the Virginia State Democratic Convention to be held in June.

**Doctors as Officers in Society of Colonial Wars.**

At the meeting in May of the Virginia Society of Colonial Wars, Dr. Alexander G. Brown, was re-elected governor. Other doctors elected to office in this branch are Dr. Clifton M. Miller as lieutenant governor and Dr. J. Shelton Horsley as surgeon. All are of Richmond.

**American College of Physicians.**

At the recent meeting of the College in San Francisco, under the presidency of Dr. S. Marx White, of Minneapolis, Dr. Francis M. Pottenger, Monrovia, Calif., succeeded to the presidency. It was decided to hold the next meeting in Montreal, Canada, the date to be named later. Officers elected are: President-elect, Dr. George Morris Piersol, Philadelphia; first vice-president and editor, Dr. Maurice C. Pincoffs, Baltimore, Md.; second vice-president, Dr. Charles G. Jennings (re-elected), Detroit, Mich.; third vice-president, Dr. Noble Wiley Jones, Portland, Ore.; treasurer, Dr. Elmer H. Funk, Philadelphia; secretary-general, Dr. Wm. Gerry Morgan, Washington, D. C. Mr. E. R. Loveland, Philadelphia, continues as executive secretary.

**Dr. Nelson Mercer**

Announces the removal of his residence and offices to 1816 West Grace Street, Richmond, Va., where he will continue his practice in internal medicine.

**Pictorial Exhibit of the New York City Cancer Committee.**

The New York City Cancer Committee has recently prepared an unusual type of historical exhibit, designed to show, through pictures, the great advances in the care of the sick since very early times, particularly with reference to cancer. If the public can be made to understand and appreciate what facilities are now available for the treatment of cancer, there should be less hesitation and delay in seeking help when necessary.

It is emphasized in the exhibit that New York State has been a pioneer in the work of cancer control. In 1884 the first hospital devoted especially to cancer treatment was opened in New York City. This is the institution now known as the Memorial Hospital for the Treatment of Cancer and Allied Diseases.

Four years later (1888) there was opened at Buffalo, under a special grant from the Legislature, the research laboratory which has developed into the State Institute for Malignant Disease, the first state maintained cancer center to be established in the United States.

In 1924, the New York City Cancer Institute, the first municipal hospital for cancer in the United States, was opened for patients, and in 1927, a Division of Cancer was formed in the Department of Hospitals of the city, with control over this and all other municipal cancer activities.

In 1930, of the seventeen special cancer hospitals in the United States with a total of 1,273 beds, six, containing 613 beds, were in New York State.

Photostatic copies of the charts composing the exhibit have been made through the generosity of the Prudential Insurance Company of America, and a limited number are available for loan to responsible organizations. Requests may be sent to the American Society for the Control of Cancer, 25 West 43rd Street, New York, or to the New York City Cancer Commitee, 34 East 75th Street, New York.

**Assignments in Medical Reserve Corps of U. S. Army.**

Major Alvah L. Herring, Med. Res., Richmond, Va., has been assigned to the 52nd Station Hospital, in capacity of Chief of Surgical Service. This unit is known locally as the Grace Hospital Unit.

First Lieutenant Albert T. Brickhouse, Med. Res., Hopewell, Va., has been assigned to the 41st General Hospital.

First Lieutenant Manfred Call, III, Med. Res., Richmond, Va., has also been assigned to the 41st General Hospital, both of the latter in the capacity of Medical Ward Officers.

XUM

**The West Virginia State Medical Association**

Is holding its sixty-fifth annual meeting at Parkersburg, June 21st, 22nd and 23rd. In addition to papers by members, there will be a number of guest speakers. The annual golf tournament will be held on the day prior to the opening of the meeting, as also will be two sessions of the House of Delegates. This promises to be an excellent meeting. Dr. Albert H. Hoge, Bluefield, is president, and Mr. Joe W. Savage, Charleston, executive secretary.

**Married.**

Dr. George Russell Maloney and Miss Emilie Littlepage Simmons, both of Richmond, Va., May 16th.

Dr. Russell Osborne Lyday and Miss Carolyn Bush, both of Greensboro, N. C., March 24th.

Dr. James Wilbert Love, formerly resident physician at Memorial Hospital, Richmond, Va., but now associated with the Crile Clinic, Cleveland, Ohio, and Miss Mabel Tompson, of Welshpool, Montgomeryshire, England, April 10th.

**Notice.**

The Library of the State Health Department has a large number of bulletins on a wide range of subjects pertaining to health and medicine, and is glad to lend any of these bulletins for a reasonable length of time to physicians and others who may wish to use them in preparing talks or papers. Write to Librarian, State Health Department, Richmond, Va., stating subjects desired.

**Dr. R. W. Vaughan,**

Richmond, Va., was re-elected president of the General Alumni Association of the University of Richmond, at its meeting in this city in May.

**Dr. W. W. Koontz,**

Dayton, Va., was seriously hurt in an auto accident, recently, when his car turned a somersault in avoiding a collision with a truck on the Spotswood Trail, while en route to Richmond.

**Wanted—**

Good location in Virginia, by middle aged doctor. Address "G. S.," care this journal. (*Adv.*)

**Hourly Nursing Service.**

The Private Duty Nurses' Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

For information, dial 3-1656. (*Adv.*)

# Obituary Record

**Dr. Thomas Marshall Jones,**

Alexandria, Va., died at a hospital in Washington, D. C., May 11th, after an illness of several weeks, following an operation. He was 83 years of age. Dr. Jones received his medical diploma from the University of Maryland in 1870 and had been engaged in the practice of medicine over sixty years. He was a widely known physician and had been coroner of Alexdria for many years. He had been a member of the Medical Society of Virginia since 1887. His wife and several children survive him.

**Dr. George Grant Howery,**

Christiansburg, Va., died on March 8th, his death being due to pneumonia. He was 45 years of age and a graduate in medicine from Lincola Memorial University, Knoxville, Tenn., in 1912. He had been a member of the Medical Society of Virginia for a number of years.

**Dr. Etta May Hadley Judd,**

Lynchburg, Va., died March 30th, as a result of injuries sustained in an automobile accident on March 25th, near Charlottesville, Va. She was born in 1870 at Branford, Conn., and graduated from the Woman's Medical College of Pennsylvania in 1895. She practiced in Litchfield, Conn., and in New York City, before locating in Lynchburg, where she had practiced since the Spring of 1919. She was a member of her local medical society and of the Medical Society of Virginia.